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BASIC  
NATIONAL EDUCATION

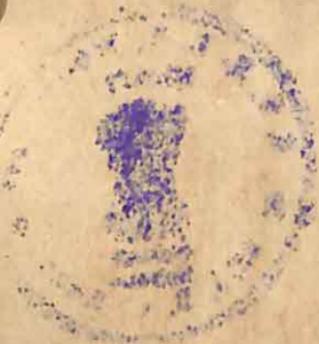
REVISED SYLLABUS FOR  
THE TRAINING OF TEACHERS  
FOR GRADES I to V

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THE HINDUSTANI TALIMI SANGH  
SEVAGRAM, WARDHA, C. P.

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## ~~809(A)~~ ~~615~~ INTRODUCTION

The first syllabus of Basic Education was published in March 1938. It was made clear in the introduction that this syllabus was to be used only as a tentative basis to start the experiments and that the true syllabus of basic education would have to be prepared gradually on the basis of actual experience of work according to the principles of this new education.

"A syllabus of this kind which aims at far-reaching reconstruction of educational practice really requires a background of fairly extensive experimental work on the lines indicated in our report, because it is only after such practical experience that all the possible correlations can be confidently worked out. We have done the best we could in preparing this syllabus and have fully utilised our collective experience as teachers, as well as the suggestions received from friends. But we must point out that this should be regarded as a tentative scheme drawn up to show that the principle of co-ordinated teaching which we have advocated in our report can be worked out in practice and translated into the terms of the curriculum. As teachers in our training schools and colleges and in the new schools of basic education begin to work out the scheme scientifically and record their observations and experiences, it will be possible to improve the syllabus progressively. Such an experimental attitude of mind on the part of the teachers is essential for the success and efficient working of this educational scheme."

Sincere attempt was made to maintain this experimental attitude of mind with regard to the first syllabus. Every conference discussed the syllabus in the light of actual experience of work and made the necessary alterations and adjustments. The second conference discussed and adopted a revised syllabus of spinning as the basic craft both for the basic school and basic training schools.

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The National Education Conference which met at Sevagram in January 1945 discussed the syllabus in the light of the experience of the previous six years of work and decided that sufficient data was then available for a thorough revision of the first syllabus and requested the Hindustani Talimi Sangh to undertake this work. The Sangh therefore appointed a committee in February 1946 with the following members to revise the syllabus for basic schools for the first five grades and to prepare a detailed syllabus for the training of teachers for the first five grades:

1. Janab Saeed Ansari, Principal, Teachers' Training Institute, Jamia Millia, Islamia, Delhi.
2. Janab Salaamatullah, Teachers' Training Institute, Jamia Millia Islamia, Delhi.
3. A representative from the Basic Training School, Bihar.
4. Smt. Shanta Narulkar, Member, Hindustani Talimi Sangh, Sevagram.
5. Smt. Ashadevi Aryanayakam, Assistant Secretary, Hindustani Talimi Sangh, Sevagram (Convener).

The members of this committee were selected from the three institutions which had conducted the experiment of basic education without an interruption or change of programme or policy for the last seven years. The committee however made full use of the experience of other institutions of basic education and tried to collect evidence from as many workers and institutions of basic education as possible.

The present syllabus is the result of an year's work of this committee. On a first casual reading, the present syllabus may appear to be entirely different from the first one and it is necessary to point out that the main difference between the first and the present syllabus is one of presentation and not of the objectives or content of basic education. For instance, it may appear that two entirely new centres of educational programme; viz., cleanliness and health, have been added to the existing syllabus to occupy the first place in

both the syllabi for basic schools and basic training schools. This is however only apparently a new departure, as most of the activities and correlated knowledge detailed under these two headings existed in the first syllabus under the headings of General Science and Social Studies. The items have been rearranged and organised into centres of education, as actual experience of work with village children and teachers have demonstrated the vital importance of these problems in rural life. The committee considered it a sounder educational procedure to recognise them as independent centres of education and give them the first place the revised syllabus.

Similarly, the present syllabus has given a greater emphasis to social training as a result of actual experience of work.

The syllabus of health education for teachers has been prepared with special care as the committee is convinced after years of work with teachers and children that the physical and mental health of our teachers and children forms the first pre-requisite of any educational programme. The general ignorance regarding rules of personal and community health and hygiene is so great even among the teachers that it is thought necessary that they should have a sound course (both practical and theoretical) in health education before they start their work as teachers in villages where, besides being responsible for the health of children under care, they will have to act as guides, in matters relating to health, to the villages where medical facilities are not available.

Essentially this syllabus, like the first, is another earnest attempt at preparing a tentative scheme of educational programme centering round activities arising out of the problems of village life. It is hoped that this second attempt will be more practical, work-centred, and more intimately connected with the actual problems of village life than the first, as this is based on the experience of the work of the past seven years. But every detail in the syllabus will have to be tested by actual work with teachers and children. The committee would like to repeat what was said in the introduction to the

## INTRODUCTION

first syllabus that there could be no final or ultimate syllabus of basic education. Every revised syllabus should be a further step in the experiment of basic education, but at the same time it should be considered essentially as a tentative basis for further revision and improvement.

It is to be hoped that the workers and teachers of basic education should always use this syllabus with this experimental attitude to prepare the way for another and better syllabus of basic education in the future.

Ashadevi Aryanayakam,  
Convener  
*Syllabus Revision Committee*

# BASIC NATIONAL EDUCATION

## REVISED SYLLABUS

for

### THE TRAINING OF TEACHERS

(For GRADES I to V)

Period of training	.. 2 years
Minimum number of working days	.. 400.

#### *Objectives.*

The objective of Nai Talim is the balanced and harmonious development of all the faculties—physical, intellectual and spiritual—of the individual and the evolution of a new social order based on co-operative work.

The teachers of Nai Talim therefore must themselves be harmoniously developed balanced individuals, must understand and accept the social objectives of Nai Talim, must have a practical experience of the working of such a community before they can assume responsibility for the education of children.

The programme of the training of the teachers therefore becomes first a programme of the development of the future teachers towards the ideal of this balanced personality with an understanding and practical working knowledge of the new social order as envisaged by Nai Talim and, secondly, the necessary training of a teacher.

This objective can best be fulfilled if the training centre is organised as a self-sufficient community based on co-operative work which as far as possible produces its necessities as regards balanced diet and adequate clothing and which has also all the necessary facilities for cultural life.

Another main objective of Nai Talim is the training of the future citizens in the principles and practice of true democracy. It is desirable, therefore, that the training centre should be organised as a democratic institution where the

pupil-teachers are trained to assume responsibility for the activities of their community life.

Another main objective of Nai Talim will be the promotion and maintenance of communal harmony and the community life of the training centre should be so organised as to achieve this objective.

It is also expected that the training centre will not only be situated in a rural area but be in close contact with the surrounding villages and function as the centre for all programmes of rural reconstruction.

The accompanying syllabus is based on the assumption that the training centre will function as such a democratic community based on co-operative work; and the educational programme, both practical and theoretical, of the training centre will be developed round the activities of this educational community—such as the production and preparation of food and clothing, programmes of personal and community cleanliness, health and hygiene, programmes of rural service and other rural activities.

We next come to the professional aspect of the training of teachers. There should be at least one model school attached to the training centre as a practising school. It will be better if there were a compact area of basic schools of which the training school forms the educational centre. The pupil-teachers should be introduced to the work in the practising school only after they have entered into the spirit of basic education and mastered the technique of craft work. It will include observation, practice-teaching, and preparation of educational programmes and educational literature.

#### *Course of Studies.*

The course of studies will centre round the following activities and programme of studies.

#### *General.*

1. The basic principles and psychological, social, economic and educational bases of Nai Talim.

2. Social training, including organisation of the community life as a self-governing democratic society based on co-operative productive work.
3. Programmes of personal and community cleanliness.
4. Programmes of health and hygiene, personal and community.
5. Production and preparation of food:—
  - (a) Gardening and agriculture.
  - (b) Kitchen work.
6. Cloth making—spinning and weaving.
7. Any other craft which may be selected as the basic craft with special reference to local conditions.
8. Study of village problems and organisation of programmes of rural reconstruction.
9. Cultural activities including:—
  - (a) Programmes and studies to acquaint the pupil-teachers with the principal master-pieces of Indian literature with special reference to the literature in the language of the locality.
  - (b) A study of Indian history with a background of world history with special reference to the social and cultural development of man—the History of Man—the History of Education.
  - (c) Reverential study of the different religions of the world showing how in essentials they meet in perfect harmony the Religion of Man.
  - (d) A study of Indian geography with a background of world geography with special reference to economic geography.
  - (e) Study of current events.
  - (f) Celebration of national, religious, social and cultural festivals.
  - (g) Organisation of cultural programmes such as lectures, discussion groups and dramatics.

## (h) Organisation of educational exhibitions.

10. Art.
11. Music.
12. Physical Education.
13. Preparation of literature.
14. National Languages.

*Professional.*

1. *Child study*:—Should begin with practical work in studying children in the practising school and the community of the training school and develop into Child Psychology.

2. *Work in the practising school*:—Including care of children; if a hostel is attached—planning and preparation and serving of balanced meals to children, organisation of games and cultural activities for children, preparation of literature for children, observation and actual teaching.

*Note.* All theoretical study regarding methodology or school administration and organisation should evolve out of this practical work with the children.

3. Principles and practice of curriculum construction.

*Essential Staff.*

1. Principal: He should be able to educate the pupil-teachers in the principles and practice of basic education and should also guide the pupil teachers in the organisation of their community life and cultural activities.

2. Agricultural expert.

3. Spinning and weaving expert—preferably a science graduate with physics and mathematics.

4. Professor of health and hygiene—preferably a qualified doctor who will be in charge of the health education of the pupil-teachers and the programmes of personal and community cleanliness and community health.

5. An expert in any other basic craft selected with special reference to local conditions.

6. The Headmaster of the practising school who will assist the Principal in the organisation and guiding of observa-

tion of school work, practice teaching, preparation of lesson-notes and programmes of teaching.

7. A literature expert who will prepare with the help of the staff and students of the training centre the necessary literature of basic education for teachers and pupils.

It will be good if the staff of the training centre also included members who could give the necessary training to the pupil-teachers in art, music and physical education. One of the teachers on the staff should also be able to teach the national language to the pupil-teachers in both the scripts.

#### *Organisation of community life.*

The first task before a training centre of Nai Talim will be the understanding of the fundamental principles and social objectives of basic education and the organisation of the community life of the training school on the basis of these principles as a democratic society based on co-operative productive work. Both the processes should go on simultaneously.

The pupil-teachers will be products of the existing system of education, where education means acquirement of book-knowledge in terms of different subjects such as mathematics, science, history or geography. They must, therefore, first understand that Nai Talim is the balanced and harmonious development of an integrated personality as opposed to compartmental subject-teaching. They must also understand why co-operative productive work has been selected as the medium of education in Nai Talim and what the true meaning of education through work is.

The pupil-teachers will also be members of the existing social order, based on the class-system, where all manual work is despised and derogated to the uneducated masses. It is essential, therefore, that these pupil-teachers at the very beginning of their training should have a clear understanding of the social objectives of Nai Talim and the ideal of citizenship inherent in it. They should also understand the ideal of democracy and the true meaning of discipline in Nai Talim.

This should be done primarily through the organisation of the community life itself into a democratic society based

on co-operative productive work. All necessary activities of the community, in the kitchen, the farm, the workshop or the work-room, are to be considered integral parts of the educational programme. The understanding should also go hand in hand and there should be ample scope for talks and discussions on problems arising out of the various activities which will throw light on the principles and objectives of Nai Talim.

The community should also organise itself into a democracy, and assume responsibility for carrying out all the necessary activities in accordance with the principles of Nai Talim.

#### OBJECTIVES AND BASIC PRINCIPLES OF NAI TALIM

1. What is true education. Difference between education and literacy. What is the meaning of the "literacy of the whole personality".
2. Nai Talim as education for life and through life. The different stages of Nai Talim. (Pre-basic, basic, post-basic and adult) corresponding to the different stages of life.
3. What is the meaning of education through work. What are the necessary conditions to be fulfilled before work can be organised as the medium of education.
4. What is the meaning of self-sufficiency in Nai Talim. What does Gandhiji mean when he says "True education is that which is self-sufficient".
5. The sociological basis of Nai Talim.
6. The economic basis of Nai Talim.
7. The psychological basis of Nai Talim.
8. The new individual as envisaged by Nai Talim—an individual, all whose faculties; physical, intellectual, spiritual and aesthetic, have been developed into a balanced and harmonious whole'.
9. The new social order envisaged by Nai Talim. The ideal of citizenship inherent in Nai Talim. True Democracy as envisaged by Nai Talim.

10. The necessary qualities, physical, intellectual and spiritual, of a teacher of Nai Talim. The role to be played by a teacher of Nai Talim in the social and economic revolution as envisaged by Nai Talim.
11. The place of a teacher of Nai Talim in the village. The role to be played by the teacher of Nai Talim in programmes of rural reconstruction. The role played by the teachers in other countries in programmes of national and educational reconstruction.
12. What is the meaning of true discipline in Nai Talim. The philosophy and technique of discipline through work. The place of rewards and punishments in Nai Talim.
13. Co-education in Nai Talim.
14. Place of religious instruction in Nai Talim.
15. The place of cleanliness in Nai Talim. Its intellectual and moral aspects. The increasing importance attached to the teaching of cleanliness in the educational programmes of all countries in the world.
16. Health education in Nai Talim. The vital importance of health education for teachers of Nai Talim.
17. The place of the kitchen in a community of Nai Talim.
18. Gardening and agriculture in Nai Talim.
19. The place of spinning and weaving as a basic craft in Nai Talim.
20. Other crafts or industries as centres of educational programme in Nai Talim.
21. The place of science in the modern world. The place of science in education through work. Development of the scientific mind—the scientific attitude—scientific approach to problems through Nai Talim.
22. The new approach to history in Nai Talim. “Whereas generally history is a chronicle of kings and their wars, the future history will be the History of Man”.
23. The new geography of Nai Talim.
24. The new science of citizenship in Nai Talim.
25. The place of art in Nai Talim.

26. Music in Nai Talim—classical and folk music.
27. Physical education—re-orientation of physical instruction in Nai Talim. Development of productive work and necessary life activities, such as activities, connected with cleanliness, grinding, drawing water from the well etc., as parts of physical education.
28. Study of the national language in Nai Talim. The necessity for studying both the scripts.
29. The place of exhibitions and museums in a programme of a national education. The development of exhibitions and museums as instruments of popular education in other countries.

30. Community and school in Nai Talim:

- (a) Relationship with the local rural community—sanitation, health work, adult education and healthy entertainments, revival and re-orientation of local culture.
- (b) Relationship with the different departments of the government, catering to the needs of the villages, such as agriculture, veterinary, public health, co-operatives etc.
- (c) Relationship with the non-government institutions and associations of rural reconstruction.

*Social Training.*

*Objectives.*

1. Understanding of the social objectives of Nai Talim with a comparative study of social objectives of the different progressive and revolutionary movements in India and the world to-day and in the past.
2. An understanding of the evolution of human society from the earliest times to the present day.
3. An understanding and working knowledge of the principles and practice of democracy as envisaged by Nai Talim, with a comparative study of the democratic institutions in India and the world to-day.
4. Understanding of the social and moral aspects of the different activities in Nai Talim.
5. Development of a rational morality free from superstitions and dogmas.

6. Development of the sense of rights and responsibilities of citizenship.
7. Development of respect for all the religions of the world.
8. Development of the sense of world-citizenship. The ideal of "One world".
9. Promotion and maintenance of communal harmony.
10. An understanding and appreciation of the cultural heritage of India.

*Programme of Work.*

I. Organisation of community life in the training centre according to the principles of Nai Talim;

- (a) Organisation of general assembly—constitution—principles and practice of adult franchise. Meetings, both the ordinary and the extraordinary. Departments of community life. Duties and responsibilities—election of ministers.
- (b) *Cabinet of ministers.* Duties and responsibilities of ministers—tenure of office—functions of the cabinet.
- (c) Distribution of work in a Nai Talim community.
- (d) Maintenance of discipline in a Nai Talim community. The laws and traditions of a community of Nai Talim. Observance of these laws and traditions. Self-imposed discipline versus discipline enforced from outside. How to deal with breaches of discipline, evolution of a technique and organisation to deal with breaches of discipline.

II. Activities of community life—their social and moral aspects:

- (a) The place of the *Community kitchen* in a Nai Talim community. Social, moral and economic aspects of the community kitchen. Functions of the kitchen committee. (See syllabus of kitchen work for details.)
- (b) The place of *Individual and community cleanliness* in community life. Cleanliness as a social and moral obligation. (For details see syllabus in cleanliness.)

(c) Place of *Individual and community health* in social life. Physical and mental health as a social and moral obligation. (See syllabus in health for details.)

(d) *Gardening and agriculture.* Social and moral aspects, of gardening and agriculture as centres of educational programme. The present position of the farmer. His future position in the new social order as envisaged by Nai Talim. The food problem in India to-day. Production of food as a national objective and how Nai Talim can help to fulfil this objective. (For details see syllabus in agriculture.)

(e) *Spinning and weaving.* Social, moral and economic aspects of spinning and weaving as a basic craft. Cloth-self-sufficiency for an individual, family and village. The history of the textile industry in India and in the world. The production of cloth as a means of exploitation in the world to-day and in the past and as a means for a social and moral revolution through Nai Talim. (See syllabus in spinning and weaving for details.)

### III. Cultural activities:—Acquaintance with the cultural heritage of India through:

(a) Study of the masterpieces of Indian art and literature.

(b) Celebration of festivals and observances—national, religious, political, social and cultural—re-orientation of old festival and creation of new festivals—educational, national and social.

(c) Revival and re-orientation of folk poetry-folk music, folk dramas, folk dances, folklore.

(d) Literary meetings, dramatic performances and musical evenings.

(e) Excursions.

(f) Organisation of exhibitions and museums.

(g) Organisation of library groups and study circles.

### IV. Social service.

(a) *Rural reconstruction.* The pupil teachers of a basic training school must take turns in programmes of service to the villages in the locality.

## OBJECTIVES AND BASIC PRINCIPLES OF NAI TALIM

### *Suggestions regarding programme:*

- (i) Village survey.
- (ii) Understanding of the problems of village life—social, political, economic and cultural.
- (iii) Village cleaning.
- (iv) Programmes for raising the standard of village health. Spreading of health knowledge—preventive measures.
- (v) Study of the village handicrafts, efforts to raise the standard of work and production.
- (vi) Organising co-operatives in the village.
- (vii) Organising healthy entertainments for the villagers.
- (viii) Arranging games for village children and adolescents.
- (ix) Revival and re-orientation of local culture.
- (b) *Volunteer work in epidemics, fairs and festivals.*

V. *Respect for all religions of the world:*—Study of the principal religions of the world, their founders and their teachings. Study of the saints and servants of men in the world throughout the ages. Individual and community worship in Nai Talim.

VI. *Study of current events and the problems in India and the world to-day:*

- (a) Through group reading of newspapers with maps.
- (b) Through lectures and group-discussions on current problems.
- (c) Through the study of books on current problems.

VII. *Development of the ideal of world-citizenship;*

- (a) Through the reverential study of all the great world religions in order to understand the truths common to all.
- (b) Through a study of the trends in the world history with special reference to individuals, institutions and movements, that have striven towards the brotherhood of man.

VIII. *Promotion and maintenance of communal harmony.*

IX. *Understanding of the evolution of human society:*

A study of the history of man with special reference to the social and cultural development of man.

## I. SYLLABUS IN CLEANLINESS

### CLEANLINESS—INDIVIDUAL AND COMMUNITY

#### Objectives.

It must be remembered that the word cleanliness has been used here not only to denote its physical sense but also to denote the intellectual and moral training that is inherent in it.

- (1) A knowledge of the scientific principles underlying cleanliness in personal and community life.
- (2) The development of the sense of cleanliness in individual and community life.
- (3) Formation of right habits and attitudes to cleanliness in personal and community life.
- (4) Understanding of the intellectual and moral aspects of training in cleanliness.

## PROGRAMME OF WORK

### I. PERSONAL CLEANLINESS, AND HABITS OF CLEAN LIVING

- (1) Cleanliness of the hands, legs, eyes, nose, ears and mouth—Why and how.
- (2) Cleanliness of the hair and the scalp—problem of lice—dandruff and how to cure it.
- (3) Care and cleanliness of the nails—Why and how.
- (4) Care and cleanliness of the gums and teeth—Why and how.
- (5) Answering calls of nature—When, where and why. Cleanliness in the process. Utensils and cleansing agents used.
- (6) Spitting and cleaning the nose—Where and how. How to cover the results of the processes.
- (7) Cleanliness of the body and the skin—bathing—How and why. Oiling and massage. Why and how.
- (8) Cleanliness of the clothes—Washing, drying and folding.

## SYLLABUS IN CLEANLINESS

- (9) Cleanliness of the bedding—shaking and airing.  
Washing and sunning.
- (10) Cleanliness in eating—washing of hands and utensils used, before and after eating.
- (11) Cleanliness of drinking water.
- (12) Cleanliness of personal possessions—articles used for personal cleanliness—clothes, bedding. Toys.
- (13) Sex-hygiene.

## II. ENVIRONMENTAL CLEANLINESS

### (a) School and Hostel.

(1) *Class-room:* Cleanliness of the class-room before and after classes, with special reference to the cleanliness of the floor where classes are held on the floor.

(2) Cleanliness of the school equipment, both before and after classes.

(3) Cleanliness of the school, compound, roads. The space immediately round the school-building. School well, play-fields and the compost pit.

#### (4) *Cleanliness of the hostel:*

(i) Each person's own room or corner. Clean floors and clean walls.

(ii) Cleanliness of the mats, beds, and clothes, arrangement of the personal belongings, arrangement of the clothes, beds and craft equipment and books.

(iii) Utilisation of waste water from the well and the kitchen to be drained into the vegetable garden.

(iv) Manure-pit—disposal of refuse, night-soil and urine. Cleanliness of the urinals and latrines.

(v) Keeping of gardens, making artistic and geometric designs. Creepers on buildings.

(vi) Lining the roads with plants, clipping and cropping.

### (b) Cleanliness of the kitchen and the dining hall.

(1) Cleanliness of the vessels used for cooking and serving.

(2) Cleanliness in the cooking of food.

(3) Cleanliness of the food prepared.

(4) Cleanliness of the dining hall before and after food.

VI. ORDER AND ARRANGEMENT (iii)

(1) In the school and hostel:

Orderliness in one's own room or corner.

Arrangement of personal possessions in almirahs or common places.

Neat folding of clothes, beds and their arrangement.

Arranging the books in shelves or almirahs in one's room, in the library or reading room.

Class-room arrangements, seating arrangements for different purposes and on special occasions. Writing materials and black-board.

Arrangement of craft equipment—arrangement of play equipment and art equipment—arrangement of shoes before entering the class.

Arrangement in the kitchen—vessels, cooked food, drinking and cooking water. Arrangement of food before and after serving and during serving.

Arrangement in preserving milk and milk-products.

Store-room arrangements. Arrangement of vegetables and fruits and food-grains.

Arrangement of cleaning equipments. Order in distributing and receiving.

Formation of queue habits.

(2) Arrangement in the home:

One-room houses—kitchen corner, dining corner, sleeping-corner.

Arrangement of furniture and things.

Two or three roomed houses—arrangements in the kitchen, store-room, cowshed—storing of hay—arrangements used.

Arrangement of the courtyard.

Arrangement of the grain-store.

Principles of arrangement. Everything must have a place and everything must be in its place.

## VII. ORGANISATION OF CLEANLINESS

### 1. Approach:

- i. In the school: Cleanliness as a group activity. The teacher as a participant and as an example in children's work.
- ii. In the home: Sharing of work with the other members of the family.
- iii. In the village: Correct approach to the villager as a friend and co-worker—the individual initiative—the will to carry out even alone in the beginning—united effort of the villagers—collective responsibility—from the school to home and from the home to the community.

### 2. Method of organisation:

- i. Planning—time, place, raw-material, equipment and workers.
- ii. Preparation—place, raw-material, equipment, cleanliness and arrangement. Mental and physical preparation of the worker: Understanding the why and the wherefore. Joy in the work.
- iii. Actual work.
- iv. Finishing.
- v. Recording.
- vi. Assessment—how far the work has been done according to plan.
- vii. Formation of habits and attitudes.

### 3. Equipment:

*Preparation, care and repair of necessary equipment:* Preparation of different kinds of brooms, dust-bins, waste-paper baskets and ropes with the locally available cheap materials.

Uses of the different kinds of brooms for different forms of cleaning, dusting, sweeping, clearing, and collecting.

Use of cleaning equipments for purposes other than cleanliness, e.g. agriculture.

21

Date ..... 13.6.05  
 Reg. No. 11359



- (5) Cleanliness in keeping milk, ghee, and butter-milk.
- (6) Cleanliness of the store-room.
- (7) Arrangement of the food-stuffs. Preserving the food-stuffs and vegetables from rotting.
- (8) Cleanliness in serving the food.

(c) *Cleanliness of the Home.*

- (1) Cleanliness of the kitchen, dining-room, store-room.
- (2) Cleanliness of the rooms—floor, walls, windows and doors. Bed room—ventilation and beds.
- (3) Arrangement of books and articles of furniture.
- (4) Cleanliness of the cow-shed.
- (5) Cleanliness of the bath-room.
- (6) Arrangement of the one-room house.
- (7) Utilisation of the waste water and kitchen water for the vegetable garden or trees in the backyard.
- (8) Manure-pit for rubbish and cow-dung.
- (9) Cleanliness of the urinals and the latrines. Disposal of urine and the night-soil.

### III. SOCIAL CLEANLINESS

(1) *Village sanitation:*

Cleanliness of the village pond or tank and common well.

Cleanliness of the public places, roads, public urinals and common latrines.

Disposal of the refuse and night-soil.

Drainage of rain water.

Waste-water, sewage water.

Clearing any bushy growth. Destruction of the filthy and foul spots.

Making path-ways and construction of small roads.

Preparation of village park, open spaces for meetings etc.

(2) *Cleanliness in cases of emergency:*

(i) *Death and disease:* Washing the house, use of disinfectants, destruction of the infected clothes and bedding.

(ii) *Epidemics:* Isolation, use of the disinfectants, washing of clothes, cleanliness of utensils, cleanliness of the villages during epidemics, cleanliness of the village tanks and common well. Purifications of drinking water.

## SYLLABUS IN CLEANLINESS

### (iii) Cleanliness during feasts:

Cleanliness during large-scale cooking.

Cleanliness of the vessels used for cooking and for serving. Cleanliness of the dining place, before and after food. Cleanliness of the water used for drinking and cooking. Disposal of refuse.

(iv) Fairs and festivals: Construction of temporary latrines and urinals, bathing facilities, supply of pure drinking water, cleanliness of the roads and bazaars, provision of extra dust bins, disposal of refuse.

## IV. CLEANLINESS IN NURSING THE SICK

Clean clothes, clean hands and feet of the person who nurses.

Use of soap and disinfectants.

Utensils like bedpans and sputum cups.

Disposal of the stools, vomiting and urine.

Cleanliness of the bed clothes and clothes of the patient.

Cleanliness of the food given to patients.

## V. DISPOSAL OF REFUSE AND PREPARATION OF MANURE

Types of refuse—rubbish, waste matter, waste-papers, sweepings, night-soil, urine, vegetable remains, cowdung, etc. Their chemical composition:

(a) In the school: The manure pits or compost pits, waste-water from the well, bathroom and kitchen for irrigating the vegetable garden.

Night soil and urine—manure for the fields.

(b) In the home: As given above.

(c) In the village: Sweeping of the village roads not to be used for raising level of place. Large scale conversion into manure—methods.

Compost-making, different methods—from night-soil, from refuse. Action of bacteria—temperature—moisture—best use of cow-dung.

Natural and artificial manures.

Repairing, sharpening of instruments, minor repairs in carpentry.

Maintaining a store, distribution and collection and arrangement of equipment.

### VIII. EDUCATIONAL EXHIBITIONS

Exhibitions as part of the educational programme in cleanliness—In schools, in villages, during conferences, fairs and festivals and pilgrimages.

*The three aspects of an exhibition:*

1. The actual demonstration of sanitary work and groups.
2. Exhibition charts, types of latrines and urinals, their construction, location and proper use. Different types of leaning instruments, their comparative values, preparation-care and the repair-materials used. Conversion of waste, matter and dirt into manure.
3. Popular talks, dramas and folk-songs explaining the importance of cleanliness in individual and community life.

### IX. PHILOSOPHY OF CLEANLINESS

1. The meaning of cleanliness. Cleanliness as destruction of dirt and creation of beauty.
2. Cleanliness as a basis of healthy life both for the individual and the community.
3. Social and moral aspects of cleanliness:
  - (a) Cleanliness as a social obligation.
  - (b) Cleanliness as a moral obligation.
  - (c) The close correlation of external and inner cleanliness.
4. Intellectual aspects of cleanliness:

Development of alertness and sensitiveness of mind as a result of training in cleanliness.

Habits of planning co-operative work as a result of group work in cleanliness.

5. Cleanliness as an instrument of knowledge: in general science, social studies, hygiene and health; language and literature; mathematics and art.

To gather all the surrounding areas of which  
are to be followed up and finally to estimate definitely  
the amount of

## II. SYLLABUS IN HEALTH EDUCATION

### *Objectives*

In a country like India where the general standard of health and living are so low, the general ignorance, regarding matters relating to health and hygiene so great and the services of State and private agencies so inadequate, the objectives of health education for a teacher of Nai Talim will be much wider than that of other countries with higher standards of living. He will not only have to conduct the routine health and hygiene programme of the school, but in remote villages, where medical facilities are not available, he will also have to be a general adviser to the village on matters relating to health, hygiene, and sanitation and also to be an amateur doctor to the school children when required until professional help is available. He must also, by his personal and family life, set an example of healthy and clean living to the villagers.

1. The first objective of health education for a teacher of Nai Talim, therefore, will be an understanding of the importance of one's physical and mental health as an integral part of one's professional equipment and the development of right attitudes and habits for the maintenance of this healthy condition.
2. Capacity to observe, recognise and interpret the physical, mental and emotional manifestation of health illness specially in children.
3. Capacity to carry out routine school programme in health and hygiene.
4. Capacity to treat minor ailments of the children.
5. Knowledge of institutions and agencies serving the programme of health and hygiene in rural areas and capacity to co-operate with them in their work.

6. Capacity to organise programmes for the raising of the health standard in the village, for the prevention of disease and immunisation.

7. Knowledge of where to refer in cases of serious illnesses and the capacity to help in the transport of patients.

8. Capacity to organise and develop educational programmes centering round personal and community health and hygiene in school.

9. Capacity to assess health habits, health attitudes and health knowledge of children.

In the teacher's training centre, the basic school teacher should have the benefit of:

(a) A programme of healthy living that will make personal and community health a reality that will involve health supervision with proper physical examination, balanced diet, suitable physical and recreational activities and wholesome environment.

(b) A sound subject-matter course in personal and community health and hygiene including a thorough course in health education methods.

It is desirable that the teacher's training school should have a qualified medical person on the staff called the Professor of Health and Hygiene in charge of both the practical work and the theoretical teaching of the subject.

It is desirable that the practising school should give at least one balanced meal to the school children under the direct supervision of this teacher where all the practical work should be done and records maintained by the pupil-teachers. It is also recommended that the training centre should maintain a well-equipped child clinic. The professor of health should be in charge of the community kitchen and the programme of personal and community health and hygiene and cleanliness of the training school and the practising school, and the theoretical course should develop out of the practical problems in health and hygiene, both physical and mental, of this community.

## SYLLABUS IN HEALTH EDUCATION

### *Outlines of Syllabus*

- I. Rules of healthy and clean living with an understanding of the reasons.
- II. Elementary anatomy and physiology.
- III. Science of nutrition.
- IV. Rural hygiene and sanitation.
- V. Knowledge of ordinary ailments, their recognition, causes and simple treatment until medical help is available.
- VI. The art and science of nursing ordinary diseases.
- VII. Common communicable diseases in rural areas.
- VIII. Treatment of emergency cases and first-aid.
- IX. Health programme in schools.

### I. HABITS OF HEALTHY AND CLEAN LIVING

#### (a) Personal

1. Personal cleanliness including sex hygiene. (See syllabus of Personal Cleanliness.)
2. Development of healthy habits like early rising, regular action of the bowels, physical exercise, healthy postures, regular and sufficient rest and sleep in good environment.
3. Necessity of sleep and rest for healthy living. Sleep: the bedroom—ventilation—cleanliness of bed cloths. How to sleep—mouth shut, lying on one side, not covering the face. Why.
4. Proper and adequate food. Dietetics and its application in the community kitchen. Healthy and clean habits in the preparation, serving and eating of food. Drugs, intoxicants, tea and coffee—their effect on health.
5. Work as an important factor in physical and mental health. The function of different activities in Nai Talim for the healthy living of an individual and community.
6. Healthy clothing to suit the different seasons and the different types of work.
7. Rules of life to suit the different seasons of the year.

8. Close correlation between mental and physical health. A knowledge of one's own physical and mental limitations as a necessary condition for health.

9. Signs of mental and emotional disorders and how to control them.

10. Hysteria—its causes and its cure.

11. Importance of recreational activities and relaxation.

(b) *Community health*

1. *Cleanliness:* Cleanliness and tidiness of the environment as an essential factor in community health. (See syllabus of cleanliness on environment.)

2. *Food:* The place of the community kitchen in community health.

3. *Work:* Organisation of the different activities in an institution of Nai Talim for healthy community life.

4. *Mental and emotional health:* The necessary mental and emotional adjustments for a healthy community life.

5. *Co-ordination of activities:* Co-ordination of work-studies, recreational activities, rest and sleep—for the healthy working of community life.

(c) *School health*

1. *School building:* Necessities for healthy school life minimum and maximum floor space. Ventilation, light, facilities for drinking water, latrines, urinals. Accommodation for schools, meals, health activities and free play.

2. *School equipment:* Adjustment of school equipments to children's sizes and capacities. Minimum equipment necessary for healthy school life.

3. *School programme:* How to organise the school timetable to assure the optimum health in children and teachers. Importance of free games and recreational activities in school life. Rules of health to be observed in the different activities like spinning, carding, weaving, sweeping and dusting, cooking, grinding, lifting of weights and digging.

4. The health of the school teacher as a necessary factor in school health.

## SYLLABUS IN HEALTH EDUCATION

### II. ELEMENTARY ANATOMY AND PHYSIOLOGY

1. *Human body:* Definition of cells, tissues and organs. Body cavities, their contents.
2. *Locomotive system:* Skeleton, muscles, joints, tendons and ligaments.
3. *Outline of the digestive system:* Various digestive juices and processes of digestion.
4. *Circulatory system:* Structure and functions of heart and pericardium, arteries, veins, capillaries, definition and maintenance of blood pressure, process of osmosis and tissue nutrition, lymph and lymphatic glands, spleen.
5. *Respiratory system:* Larynx, trachea bronchi, lungs, pleura, gaseous exchange, tissue respiration.
6. *Excretory system:* Kidneys, ureters, bladder. Functions of the skin, detoxicating function of liver.
7. *Nervous system:* Brain, spinal cord, nerves sensory and motor, sympathetic and pro-sympathetic nervous system, reflex action.
8. *Reproductive system:* Outline of anatomy and physiology of the reproductive system, ductless glands.
9. Topography of the various organs.

### III. SCIENCE OF NUTRITION

*Aim:* Teaching the nutritional needs of the body at various ages and for people in various occupations; planning and preparation of simple balanced and attractive meals for children and adults with local foodstuffs available at different seasons, emphasizing the need for cleanliness and hygiene practice in handling food.

Principles of human nutrition linked to the functions of the body. Chemical constituents of various foods. Study of the common articles of food with regard to their food values. Food values of vitamins and salts—their requirements and uses.

Energy requirements of individuals as modified by age, sex, climate and occupation.

Other important factors to be considered in connection with normal nutrition—sleep, rest, physical and emotional conditions.

Normal nutrition of infants. Balanced diet for growing child. Diet in adolescence. Balanced diet for normal adult.

Planning of adequate meals for a family or community of given number.

Preparation and serving of food. Cleanliness and protection of food.

Family and community budget and its relation to growing and purchasing of food. Planning diets for rural people, where money is not regularly available, to supplement food supplies. Results of nutritional deficiencies; recognition of deficiency conditions. Listing of common foods available in the locality and working out their food values.

General principles of feeding the sick. Invalid cookery.

#### IV. RURAL HYGIENE AND SANITATION

The physical, economic, social and moral factors in the solution of the problems of rural health and hygiene.

The problem of village water supply.

Drinking and cooking water. Water for bathing and washing clothes.

Village houses—construction, ventilation, arrangements for light and air, latrines, urinals. Storing of food and agricultural equipment. Manure-pit, dung-heap, disposal of rubbish and waste-water.

Village roads and lanes.

Village latrines and urinals, their location, construction and disposal.

The various types of latrines and their comparative uses.

Common communicable diseases in the village. Their preventive measures, immunisation.

Village feasts, fairs and pilgrimages.

The village-diet. How to improve it with locally available materials.

V. KNOWLEDGE OF ORDINARY AILMENTS—THEIR RECOGNITION AND SIMPLE TREATMENT

1. Constipation. Its causes. Effects of constipation. Special diet and other treatment.
2. Indigestion—symptoms and treatment.
3. Dirty mouth and bad teeth, causes—complications and treatment.
4. Dirty head with lice—causes—usual complications—treatment with cleansing and special applications.
5. Sore—eyes and discharging ears—causes and simple treatment in the very beginning.
6. Skin diseases: the different common diseases—their causes—complications and the treatment in each case with cleaning of the body and of the special site of disease—the application of ointments and other treatment. Special diet to skin disease. Hygienic precautions necessary to be taken in regard to isolation and sterilisation of clothes and bedding.

*Note.* The student should have simple practice in the treatment of the skin, as skin diseases of all kinds are very common in every village.

7. Infected wounds—sores, boils and glands—causes and complications—simple treatments.
8. Diseases caused by deficiency in diet. Treatment and special diet.
9. Fevers—theoretical and practical knowledge of the different types of fever—the symptoms and signs that accompany fever. Ability to distinguish whether the fever is likely to be due to local cause, such as inflammation of any part of the body, throat or ears, or chest condition, dysentery or due to one of the specific fevers—typhoid, measles or malaria etc.
10. Diarrhoea, vomiting and dysentery. Their usual causes and treatment pending the arrival of medical aid.

*Note.* The teacher should realise his own limitations and should refer to technical experts whenever necessary.

## VI. COMMON COMMUNICABLE DISEASES IN THE VILLAGES AND THEIR PREVENTION

Common communicable diseases—their mode of transmission. Malaria, influenza, smallpox, chickenpox, measles, mumps, plague, cholera, typhoid, dysentery, scabies, ring-worm, conjunctivitis, trachoma. Causes of the above diseases. Mode of transmission, prevention, disposal of excretions, disinfection of soiled linen and utensils. A short description of special nursing in each case. Concurrent disinfection. Disinfection of the room and its contents at the end of the illness. Isolation.

The problem of leprosy and tuberculosis in villages.

*Insects and other pests:* Flies, mosquitoes, bed-bugs, fleas, rats, cockroaches. Possible harm from pet animals like dog, cat, hens. Lice, their prevention and destruction.

## VII. NURSING

1. Choice of sick-room or the corner for the sick-bed with special reference to ventilation, light etc.
2. General nursing of a patient in bed; sponging, giving of bed-pans and sputum cups, changing personal and bed clothes. Care of pressure points in the skin.
3. Noting the general condition of a patient: changing of bed clothes with the patient in bed. Hygiene of the room with spotless cleanliness of all utensils. Regular feeding at appointed times. Care for his comfort and happiness. Anticipating the needs of the patient and providing for them.
4. Special treatment: giving of different kinds of enemas, hot and cool sponging. Hot and cold fomentations. Dry heat. Looking after eyes, nose and mouth. Simple massage—limitations of massage. Gargling and painting the throat. Steam inhalation. Feeding of the child and the helpless patient in bed.
5. Theoretical and, if possible, practical knowledge of the nursing in the case of malaria and in the case of diarrhoea, cholera, small-pox and chicken-pox in bed.

6. Special diets in illness: fever, anaemia, indigestion, dysentery, and diarrhoea and knowledge of invalid cooking, including vegetable and liver soups, whey and the quantities of nourishment required especially by children.

7. A working knowledge of simple weights and measures and the making of lotions. The giving of medicines.

*Simple house-hold remedies:* Castor oil, kurchi, tincture iodine, potassium permanganate, boric powder, sulphur and boric ointment, amritdhara, trifala, ajwain, phitakri, navasardar, mulathi phenyl, cotton wool bandages, lint, spirit, crude-oil, soda bicarb, sodium salicylate, asafoetida, ginger, dried ginger (soot), haldi (turmeric powder) and other simple remedies.

### VIII. EMERGENCY AND FIRST-AID

(a) *Accidents:* Cuts, wounds, bleeding: external—arterial, venous, capillary, epistaxis, bleeding after extraction of a tooth. Internal, haematemesis, haemoptysis etc. Emergency treatment to stop the bleeding—tourniquets, pressure points and treatment of one who has lost much blood.

(b) *Shock:* Causes, treatment. Blows, falls, concussion; emergency treatment in each case.

(c) *Fracture:* A short description of the varieties, signs and symptoms of fracture; simple, compound, green-stick, depressed, spontaneous. Emergency treatment including removal of the injured person to the nearest doctor or hospital.

(d) *Dislocation:* Signs and symptoms of various dislocations and their treatment.

(e) To improvise methods of transporting the sick and the injured.

(f) Burns and scalds; various degrees of burns, their treatment.

(g) Stings of poisonous plants and insects.

(h) Wounds by poisoned weapons.

(i) Snake bites.

(j) Bites of rabid animals.

## BASIC NATIONAL EDUCATION

(k) Drowning. Asphyxia due to other causes. Treatment. Artificial respiration.

(l) Insensibility and fits, causes and symptoms and signs. Emergency treatment of:

- (i) Fainting.
- (ii) Convulsions.
- (iii) Hysteria.
- (iv) Epilepsy.
- (v) Eclampsia.

(m) Poisons and intoxicants. Food poisoning, opium, arsenic, datura, oleander seeds, drunkenness, etc.

(n) *Bandages and bandaging*: Roller bandage; triangular bandage, may-tailed bandage, slings.

Knowledge of institutions that serve the programme of health and hygiene in rural areas: specially leprosy, tuberculosis, rabies etc.

## IX. OUTLINES OF THE SCHOOL HEALTH PROGRAMME

1. Health protection:
  - (a) School sanitation.
  - (b) Communicable disease control.
  - (c) Examinations—physical and mental.
2. Health promotion:
  - (a) Hygienic arrangement of the school programme.
  - (b) Health education.
  - (c) Correction of physical defects.
  - (d) Programmes of health education.
3. Routine procedure:
  - I. Weighing and measuring.
  - II. Morning health review.
    - (a) Daily inspection of personal cleanliness.
    - (b) Checking of health habits regarding elimination, food, rest, sleep and exercise and postures.
    - (c) Corrective exercises where necessary.
    - (d) Observing symptoms of illness.
    - (e) School meals.
    - (f) Recreational activities.

## SYLLABUS IN HEALTH EDUCATION

- (g) Maintaining a small school dispensary for ordinary ailments.
- (h) Helping in the work of the child clinic if there is one.

### *Assessment of results*

- (i) Assessment of health attitudes.
- (ii) Assessment of health habits.
- (iii) Assessment of health knowledge.
- (iv) Assessment of health status of children.

12. Recognition of different manures.
13. Mixing of different manures.
14. History of manures and manuring.

(g) *Sowing:*

1. Implements used, their various parts, functions and accessories.
2. Measurement and diagram of the important parts.
3. Different methods of sowing used for different crops and their advantages and disadvantages.
4. Time of sowing for different crops.
5. Depth to be sowed in the case of different sized seeds.
6. Distance of seeds in the same line and in between two lines while sowing.
7. Assessment of work.

(h) *Hoeing or interculturing:*

1. Names of the implements used, their various parts and functions.
2. Measurement and diagram of the important parts of the implements used.
3. Objects, time and methods in the right kind of hoeing or interculturing.
4. Different types of hoes used, their advantages and disadvantages.
5. Care to be taken of hoes when used and not used.
6. Work turned out by different types of hoes.
7. Cost of various hoes.
8. Raw material used for hoes.
9. History of hoes.

(i) *Weeding:*

1. What is a weed?
2. Common local weeds and their classification.
3. Propagation of weeds.
4. How weeds damage the crops.
5. Best time for removing weeds.
6. Method of weeding.
7. Care while weeding.

SYLLABUS IN AGRICULTURE AND GARDENING

8. Best disposal of the weeds—when what remove to kinds of weeds.

9. Botanical study of different kinds of weeds.

10. Assessment of work.

(j) *Irrigation:*

1. Different sources of irrigation water.

2. Different kinds of water lifts used under different conditions.

3. Methods of field and orchard irrigation, their advantages and disadvantages.

4. Irrigation requirements of the different irrigated crops.

5. Care while irrigating crops.

6. Study of different water movements in different kinds of soils.

7. History of irrigation in India in particular and the world in general.

8. Cost of different water-lifts.

(k) *Control of crop pests and diseases:*

1. Recognition of the parts of plants affected by the different crop pests and diseases.

2. Names of the common crop pests and diseases that are found in the locality.

3. Life history of the crop pests and diseases of locality.

4. Preventive and curative measures used against controlling the crop pests and diseases.

5. Names of common insecticides and fungicides used, how to prepare them and when and how to use them.

6. Collection and preservation of the parts affected by the crop pests and diseases, useful and harmful insects, common insecticides and fungicides and arranging the same in a museum.

(l) *Harvesting and threshing:*

1. Signs of recognition of different crops for harvesting.

2. Time of harvesting for different crops.

### 3. SYLLABUS IN AGRICULTURE AND GARDENING

The syllabus in agriculture and gardening cannot be prepared on an all-India basis. It has to be prepared specially for each training centre by the local agricultural experts according to the particular agricultural conditions of each locality. The objectives of the work in agriculture and gardening should be that the educational community of the training centre is self-sufficient as far as possible with regard to its necessities in balanced diet—excluding food grains, oil seeds, milk and milk products.

1. *Crop production:* Typical crops of the locality should be grown, however, on small demonstration plots on an experimental basis. Preference should be given to: 1. grains such as legumes and groundnuts which form a valuable supplement to the normal diet of an Indian villager. 2. Fibrous grains such as sunhemp etc. 3. Cotton growing. The community should try to be self-sufficient in its requirements of cotton 4. Growing of essential spices such as chillies, ginger, onions and garlic etc.

#### 2. Horticulture:

*Vegetable growing:* An attempt should be made that the educational community be self-sufficient as regards its necessity in vegetables, which can be eaten both raw and cooked, all the year round. This programme should include growing, preservation and dehydration of vegetables.

*Fruit-growing:* (a) Cultivation of fruit crops—specially local deshi varieties. A special attempt should be made to grow sour limes which form a valuable necessity in any balanced diet. (b) Fruit preservation.

3. *Milk and milk products:* It will not be possible for the community to be self-sufficient as regards its necessities in milk and milk products but a model dairy should be maintained for educational purposes. This programme should include:—

- (a) Care of cattle, including feeds and feeding.
- (b) Milking and handling of milk.
- (c) Growing of fodder crops and their storage including silage.
- (d) Preparation of curd and disposal of milk products.
- (e) Elementary knowledge of physiology of cattle—their common diseases and treatment.

4. *Oil pressing:* The educational community should maintain an oil-press and be self-sufficient as regards its necessities in oil. A proportion of oil-seeds may be grown on the farm though most of it may have to be bought and stored. This programme will include:—

- (a) Gur-making from sugarcane or palms according to local condition.
- (b) Bee-keeping.
- (c) Flower gardening and decorative gardening.
- (d) Cultivation of medicinal herbs.
- (e) Poultry farming and } Wherever fish and eggs
- (f) Pisiculture. } are a part of the normal diet.

### ACTIVITIES

#### (a) *Ploughing:*

1. Name of the implement used, its various parts and functions, with accessories.
2. Measurement and diagrams of the important parts of the implements used.
3. Advantages of ploughing.
4. Best time for ploughing.
5. Methods of ploughing.
6. Types of ploughs used, their advantages and disadvantages.
7. Care of the ploughs when in use and when not in use.
8. Work turned out by the various ploughs.
9. Raw materials used for various types of ploughs.
10. Costs of various ploughs.
11. History of ploughs.

3. Different methods adopted in harvesting different crops.
4. Equipment used in harvesting different crops.
5. Care to be taken while harvesting different crops.
6. Selection of site for the threshing yard and method of preparing the same.
7. Different methods of threshing adopted for different crops.
8. Different methods of winnowing.
9. Different types of winnowers, their description, cost etc.

*(m) Storing of the produce:*

1. Different methods of storing the various types of farm produce such as grains, fruits, vegetables, etc., for the various purposes such as for sowing next year, consumption, marketing etc., as followed in the locality.
2. Arrangements for the care of the farm produce in the store.
3. Common enemies such as rats, insects etc., found in the store and methods of preventing and controlling the same.
4. Planning of an ideal store-room.

*(n) Marketing:*

1. Practice in grading the farm produce into different grades according to the size, shape, colour, weight, condition of maturity etc.
2. Different methods of marketing the produce.
3. Advantages of grading.
4. Keeping accounts of the sale proceeds.

*(o) Study of soil and soil fertility:*

1. Local rocks and the minerals found in them.
2. Rock weathering and soil formation.
3. Difference between the soil and sub-soil.
4. Soil constituents and their properties.
5. Physical properties of soils.
6. Classification of soils—different methods.
7. Local names of the soils and the crops grown in them.

## SYLLABUS IN AGRICULTURE AND GARDENING

8. Texture and structure of soils.
9. Ideal soil tilth.
10. Study of air, water, heat, organic matter, humus, organisms and colloids in the soils.
11. Barren soils and virgin soils.
12. Factors governing soil fertility.
13. Methods of improving soil fertility such as tillage, manuring, rotation, mixtures, fallowing, weed control, levelling, bunding, rabbing, irrigation, drainage etc.

*Note.* The knowledge regarding the soils and soil fertility should be imparted while doing the various activities in the fields. The trainees should be encouraged to collect different types of soil, and rocks and arrange them in the museum in proper order.

(p) *Rotation of crops:*

Principle of rotation, usual rotations practised in the locality; possible improvements in local rotations with special consideration of the commercial or utility value of the crops. Rotation versus successive cultivation.

(q) *Poultry-keeping:*

1. Fowls in locality, their egg laying capacity and size.
2. Improved poultry, their egg laying capacity and size.
3. Natural and artificial incubation, their advantages and disadvantages.
4. Feeding, housing and care of fowls in different stages.
5. Common ailments—prevention and treatment.
6. A model poultry farm.

(r) *Animal husbandry:*

1. Collecting statistics of the live-stock of the villages and their importance to agriculture.
2. Study of important local breeds of cattle, sheep goats etc., their main characteristics, merits and drawbacks.
3. Feeding, housing and care of live-stock.
4. Milch cattle of the locality—a special study.
5. Preparation and study of different dairy products.

(b) *Clod crushing:*

1. Name of the implements and accessories used, their different parts and functions.
2. Measurements and diagrams of the different important parts of the implement used.
3. Why to crush clods.
4. When to crush clods.
5. How to crush clods.
6. Types of clod crushers, used their advantages and disadvantages.
7. Care of clod crushers when in use and when not in use.
8. Work turned out by the different types of clod crushers.
9. Raw materials used for different types of clod crushers.
10. Cost of different clod-crushers.
11. History of clod-crushers.

(c) *Harrowing:*

1. Implements used, their various parts and functions and accessories.
2. Measurements and diagrams of the important parts.
3. Why, when and how to harrow.
4. Different types of harrows used, their advantages and disadvantages.
5. Care of harrows when in use and when not in use.
6. Work turned out by the different harrows.
7. Different uses of harrows.
8. Raw materials used for the different harrows.
9. Cost of the different harrows.
10. History of the harrows.

(d) *Collecting stubbles of the previous crops:*

1. Why, when and how to collect stubbles. (Where this is not necessary.)
2. How best to dispose of them (as fodder for cattle or compost).

SYLLABUS IN AGRICULTURE AND GARDENING

3. Assessment of work.

(e) *Levelling and bunding:*

1. Implements used, their various parts, functions and accessories.

2. Measurement and diagram of the important parts.

3. Why, when and how to level and bund.

4. Different types of implements used, their advantages and disadvantages.

5. Care of implements when in use and when not in use.

6. Work turned out.

7. Cost of implements.

8. Raw materials used for implements.

9. History of the levellers.

(f) *Manuring:*

1. What is manure?

2. Objects of manuring.

3. Time of manuring.

4. Methods of manuring.

5. Kinds of manures and their special utility. Human excreta and urine as valuable manure; oil cakes and their use as manure; bones and their importance as manure, various forms of bones as manure for field, garden and orchard crops. Green manure and its importance; crops suited for green-manuring; leguminous crops, their value in crop rotation and in green manuring; root nodules.

6. Micro-organisms that convert organic matter into a good manure for plants; their mode of action. Conditions that favour their multiplication and activity.

7. Method of preparing compost. Farm yard manure, urine-earth, night-soil etc.

8. Cost of different manures.

9. Local methods of storing farm-yard manures and their disadvantages.

10. Manurial requirements of the different crops of the locality.

11. Manurial nutrients in different manures.

6. Methods of cattle improvement followed in the locality and improvements necessary.

7. Cattle diseases and their control.

8. Dairy management including hygiene.

9. Records to be maintained.

(s) *Weather study:*

1. Study of different weather instruments.

2. Recording of daily temperatures and rainfall.

3. Study of clouds and winds and weather conditions in different seasons.

4. Knowledge of the weather forecasts.

(t) *Plant study:*

The different plant parts should be studied while growing and observing the different crops from the following points of view:—

*Seeds:*

1. Study of the different kinds of seeds, their parts and functions.

2. Good and bad seeds; percentage of germination.

3. Conditions necessary for the germination of seeds.

*Roots:*

1. Different kinds with diagrams and examples.

2. Different functions with experiments, if any.

3. Uses.

*Stems:*

1. Different kinds with diagrams and examples.

2. Different functions with experiments, if any.

3. Uses.

*Leaves:*

1. Different kinds with diagrams and examples.

2. Different functions with experiments, if any.

3. Uses.

*Flowers:*

1. Different kinds and parts and functions with diagrams and examples.

## SYLLABUS IN AGRICULTURE AND GARDENING

2. Pollination and fertilisation in flowers, various agencies.
3. Uses.

### *Fruits:*

1. Different parts and their functions.
2. Different kinds with examples and diagrams.
3. Uses.

### *Parasitic plants:*

1. Different kinds.
2. Harm caused by these to crops.
3. Methods of eradicating.

### *(u) Surveying:*

1. Measuring a field.
2. Plotting and calculating the area of a field.

### *(v) Oil-pressing:*

1. Food value and necessity of oils—fats, application of oils to the body.
2. Sources of fat.
3. Oils used in different parts of India.
4. History of oil extraction resulting in the ghani and the mill.
5. Superiority of the ghani oil over the mill pressed oil.
6. The place of the ghani in the village economy.
7. The mechanics of the ghani.
8. Use of oil in industries.
9. Oil-seeds grown in different parts of India—world statistics.
10. Different kinds of oil-seeds, their fat content and food values.
11. Imports and exports of oil-seeds and oils.
12. Types of ghani in different parts of India, their merits and demerits.
13. Diagrammatic representation of the Maganwadi ghani.
14. Purification of oils.

BASIC NATIONAL EDUCATION

(w) Bee-keeping:

1. Bees as pollinating agents.
2. Bee-keeping as a village industry.
3. Different kinds of bees, the bee family—queen workers, drones.
4. Capturing the bees and transferring the same to the bee-hive.
5. Working of the bee colony inside the bee-hive and outside the bee-hive.
6. Care of the hive; protection of the bees from the enemies.
7. Methods of collecting the honey from the combs and extracting the same.
8. Honey—its various uses.

(x) Gur-making:

1. Different plants such as sugarcane, beet root, date palm etc.
2. Methods adopted in the preparation of gur (jaggery) from different plants.
3. Food values of different kinds of gur.

(y) Carpentry and smithy:

Simple repairs to agricultural tools and implements.

(z) Rope making:

1. Raw materials used in preparing ropes.
2. Different methods of preparing ropes.

(aa) Basket making:

Raw materials and methods used in basket making.

(bb) Pisiculture:

Wherever fish is a part of the normal diet of the locality.

(cc) Agricultural records and accounts.

(dd) Decorative gardening.

(ee) Cultivation of medicinal herbs.

## 4. SYLLABUS IN SPINNING AND WEAVING

### Objects:

1. The mastery of the skill and the scientific knowledge of the different processes in the craft from the growing of cotton to finished cloth.
2. To enable the teacher to educate children upto grade V through the basic craft—spinning and weaving.
3. To give the necessary training to enable every person in the community either individually or collectively to be self-sufficient regarding his or her necessity in cloth.

### Suggestions:

This syllabus is intended for teachers for grades I to V in schools where spinning and weaving is the basic craft. It is desirable that every training school should grow the own cotton. An alternative syllabus has been suggested for centres which are not suitable for cotton cultivation to the required extent, and where the work will depend on machine-ginned and pressed baled cotton. It should be realised, however, that the fullest educational and economic possibilities of spinning and weaving as a basic craft can be worked out only when the entire process from the growing of cotton to the finished cloth is developed as an educational programme.

The syllabus has been arranged logically from the growing of cotton to the weaving of cloth. The staff of the training school should, however, rearrange the syllabus according to the educational requirements of each centre. A few suggestions are made here regarding the organisation of work:

(i) The best educational approach would be not to begin with spinning but with the preliminary processes of weaving, to acquaint the pupil-teachers with the necessary qualities of good yarn. Many common mistakes in spinning can be automatically avoided if the pupil-teachers have practical experience of the difficulties in weaving.

(ii) In spinning, the training can begin with either the takli or with the charkha. The charkha, however, will be more useful in achieving cloth self-sufficiency.

(iii) As regards carding, the pupil-teachers should begin the training with the hand-bow or yudhdha-pinjan. The madhyam-dhunki may be introduced in the second year as a special course.

(iv) Correlated aspects of the craft are touched upon at the end of each activity, but these are only in the nature of hints to the teacher which he is expected to develop with his own initiative.

### A. SPINNING AND WEAVING

#### 1. Cotton growing:

The spinning teacher in consultation with the agricultural teacher will arrange for the actual cultivation of cotton by the trainees. It is desirable to make experiments in the cultivation of different varieties of cotton and observe and record the results.

*Note.* The necessary acreage for cotton cultivation in a training school is worked out below on the basis of cloth self-sufficiency for the whole of the community:—

30 square yards of cloth is taken as the average requirement of an individual per year. 30 sq. yards of cloth require 120 hanks of yarn of average count 16. For the above, 320 tolas or 4 seers of lint are needed. Taking the strength of the training school as 60, total lint required for the year for the school will work out as 240 seers, i.e., cotton required for the school works out to 800 seers (percentage of lint in cotton is taken as 30). Taking the average yield of cotton per acre as 140 seers, which is a moderate estimate, the area of land on which cotton is to be cultivated for a training school of strength 60 comes to about 6 acres. These calculations have been prepared on the basis of the Wardha cotton. The necessary variations should be made according to the local varieties of cotton. These calculations are based on yarn whose average count is 16, as the cloth is to be produced and used by a community of educational workers whose basic craft is spinning and weaving. It should be remembered, however, that

## SYLLABUS IN SPINNING AND WEAVING

the average consumption of cloth in rural areas, will be from coarser yarn (average count 10 to 12).

Visits to local cotton fields, study of the local soil and climate. Study of cotton growing centres in India and in the world. Recognition of the different varieties of cotton.

*Correlated study:* The different varieties of cotton in the world and the places where they are grown, the climatic conditions suitable for the growth of each variety, results of experiments made in India to grow different varieties, the maximum yield of each variety per acre, the effect of manure on the cultivation of cotton.

Chief cotton-trade centres of India and the world. Present conditions of the cotton trade. Cotton as a factor in slave-trade, exploitation, competition and wars in the history of the world in the past. The re-orientation of the trade in cotton and its products on a moral basis as a part of the programme of Nai Talim.

*Mathematics:* Calculations pertaining to the cultivation of cotton and growth of the plant.

*Geography:* Seasons, climate and soil in connection with the growth of cotton. Cotton trade centres in India and the world and their growth.

*General Science:* Plant life, all the processes in the growth of the cotton plant from seed to pod. Culture of the tree-cotton. Its possibilities in the programme of self-sufficiency. Pests. Manuring of cotton-fields.

*Note.* The above aspects will be common to both the subjects, Spinning and Agriculture.

*Social Studies:* The role played by cotton in the history of the world; the relation between cotton cultivation and the economic and social life of the people in the several countries.

### 2. *Picking of cotton:*

Proper time for picking, number of pickings for the different varieties of cotton, correct method of picking.

### *Correlation:*

*Mathematics:* Calculation of man power and wages.

*General Science:* Effect of humidity on cotton in relation to picking.

*Social Studies:* Difference between cotton picking as an educational process and as hired labour. The study of the slave-trade in America in relation to cotton picking and how this has led to the Negro problem there.

### 3. Collection and storing of cotton:

Separation of good and bad cotton, drying of cotton, disposal of bad cotton, estimating cotton needed for the whole year.

### Correlation:

*Mathematics:* Calculation of the produce, assessing the amounts of waste and good cotton.

### 4. Cleaning of cotton:

The correct method of cleaning.

*Amount of work:* Before the end of the two years' course, each trainee will have occasion to clean all the cotton necessary for her or his cloth self-sufficiency.

### Standard of attainment:

1 lb. of well picked cotton per hour at the end of the course.

### 5. Ginning:

(i) *By the hand-gin:* Necessity of drying cotton before ginning, kinds of hand-gins used in different parts of India, their cost, the mechanism involved, the advantages and disadvantages of each type, disposal of seeds for cattle-feed.

*Standard of attainment at the end of the course:* 60 tolas of soft cotton in half an hour, and 40 tolas of hard cotton in half an hour.

(ii) *By rod and plank:* Drying of cotton before ginning. Measurement of, and mechanics involved in this apparatus, a comparative study with the hand-gin.

*Standard of attainment:*  $7\frac{1}{2}$  tolas of soft cotton and 5 tolas of hard cotton in half an hour.

*Correlation:*

*Mathematics:* Calculation of wages, ratio between seeds and lint in cotton, percentage of waste.

*General Science:* Mechanics involved in the apparatus, evaporation process in drying cotton, different metals that can be used for the rod, their densities and other properties. Acquaintance with geometrical forms.

*Social Studies:* Place of ginning in village economy.

**6. Combing (Tunayi):**

Its meaning, need for combing cotton, three types of combing.

(i) *Dhanush-tunayi* (combing with the small handbow): Care in handling lint, the different parts of the instrument, its measurements. The mechanism involved in its working, where to strike the bow, the places where the cotton should touch the string, testing the tension of the string by its sound during vibration, preparation of the bow.

*Amount of work:*

Each student should prepare slivers weighing 40 tolas.

*Standard of attainment:*

*Speed:* 2 tolas from seed-cotton per hour.

*Quality:* The carded cotton should be of such fineness as to enable the spinner to spin even, strong, well-twisted yarn upto 16 counts on the charkha, the attainment going upto 140 rounds, including winding, in half an hour. This attainment is required to be achieved only after the spinning course in the charkha is finished.

*Correlation:*

*General Science:* The mechanism of the dhanush and its action in loosening the fibres of cotton.

(ii) *New combing (Nai Tunayi):—*

The trainees should have practice in combing both by the fingers and by the bamboo knife. Comparative study of 'Fine combing' and 'New combing.'

*Amount of work:*

Each trainee should prepare slivers of 40 tolas weight.

*Standard of attainment:*

**Speed:** At the end of the practice, the speed should be 1 tola of slivers from seed-cotton in an hour.

**Quality:** These slivers should lend themselves to spin even, well-twisted, strong yarn of counts 16 to 20 on the charkha, the rate being at least 140 rounds, including winding, in half an hour.

(iii) *Punayi:*

The importance of the punayi method for the programme self-sufficiency. Comparison with the results of combing and carding.

*Amount of work:*

Each trainee should prepare slivers of 40 tolas. Only long staple cotton should be used for this training.

*Standard of attainment:*

**Speed:** 3 tolas of slivers from seed-cotton in an hour.

**Quality:** These slivers should lend themselves to spin 12 to 14 counts of even, well-twisted, strong yarn on the charkha, at a speed of 140 rounds, including winding, in half an hour.

7. *Carding:*

Its purpose, the right method of carding, importance of covering the nose, correct posture, correct method of holding the carding bow and the striker, right type of striking, the correct method of moving the carding bow while striking, taking care to see that the gut touches the cotton at the required places only. Picking out bad cotton and waste, recognition of well-carded cotton. Carding for the purpose of spinning different kinds of yarn. Three types of carding bows used—the Bal dhunki, Hand dhunki and the Madhyam dhunki—their measurement, the stages in their development. Parts of the dhunki-matha, dandi, panka, tant, chamda, kaukar, atma and gotila—the function and necessity of each,

fitting of the carding bow for work; processes of winding the gut, fitting the vibrator, tightening the gut, adjusting the bridge to proper sound, its testing by finding the tension of the string, its vibration and sound, kind of wood suitable for making carding-bows, preparation of guts in India and abroad, qualities of a good gut, the recognition and testing of a good gut, how to avoid the sticking of cotton-fibres to the gut. The necessity for carding in a dry atmosphere, the required nature of the floor, the need for mats on which to card and the necessity for cleaning lint before carding.

*Standard of attainment:*

*Speed:* 2½ tolas in half an hour.

*Quality:* To enable the spinner to spin with this either on the takli or on the charkha at a speed of 60 or 140 rounds, including winding, respectively in half an hour, the count being 10 to 16 on the takli and 16 to 20 on the charkha. The yarn should be even, well-twisted and strong.

*Correlation:*

*Mathematics:* Cost of the materials, calculation of wages, percentage of waste, weights and measurements.

*Geography:* Places where the required varieties of wood are produced, gut making centres in India and abroad.

*General Science:* Relation of humidity to carding. Effect of carding on the lungs, lung-diseases, mechanics of the carding bow, principles of the mono-chord and the propagation of sounds.

*Social Studies:* The place of the carding bow in human civilization, the place of the carder in society, carding as an educational process and as hired labour. Dadoo the carder-saint of northern India.

*Drawing:* The carding bow and its different parts.

**8. Making of slivers:**

Correct method of preparing slivers. Requisites of a good sliver length, weight, and form. Correct packing of slivers, careful stocking of slivers, Equipments used—the board, the handle, and the rod.

**Correlation:**

**Mathematics:** Calculating the number of slivers from a given weight of cotton, calculating the weight of each sliver and wastage in preparing slivers from lint. Percentage and averages. Geometrical forms.

**9. Spinning:**(i) **By the takli:**

Spinning with both hands.

Use of the ash and card-board or its substitutes.

Joining and piecing.

Correct method of winding yarn on the takli.

Correct method of winding yarn on the winder.

Correct method of preparing the hanks.

The following methods are suggested for spinning on the takli: Spinning on the takli (with both hands) by the following methods:—

1. Posture-sitting	Twisting on the ground and winding in the air.
2. " "	Twisting in the air and winding in the air.
3. " "	Twisting on the ground and winding on the ground.
4. " "	Twisting in the air and winding on the ground.
5. " standing	Twisting in the air and winding in the air.

**Note:** The above processes should be practised with the thumb and the fore-finger and the thumb and the middle finger separately. Quantity—10 hanks.

6. Posture-sitting.	Twisting on the leg above the knee and winding on the ground.
7. " "	On the leg below the knee and winding on the ground.
8. " "	Twisting on the sole of the feet and winding on the ground. Total quantity—10 hanks."

Total quantity of yarn to be spun on the takli—20.

*Correlation:*

Study of the different parts of takli and their measurements. Study of the different materials out of which the different parts of the takli are made. Recognition of a good takli. Preparation of bamboo taklis (with or without hook—the disk to be made of clay, tile, stone or similar locally available material.)

Recognition of good yarn—twist, evenness, and strength, testing, calculation of count and strength, the mutual relationship between diameter and twist, different qualities of yarn from different kinds of cotton.

*Mathematics:* The four simple rules in relation to the making of slivers and yarn, calculation of wages, time and work, calculation of count and strength.

*General Science:* Properties of different materials from which taklis are produced, principle of rotation and air resistance—friction.

*Social Studies:* Potentialities of the talki for cloth self-sufficiency. History of the takli, the part played by the takli in the civilisation of ancient India and other countries in the past.

(ii) *By the charkha:*

Spinning by the local, kisan or Yervada charkha, both by the right and by the left hands. Fitting the charkha for use, precautions to be taken for the smooth running of the charkha—oiling, smooth thread on the grooves, on the back of the (spindle-bearer) modia and the vertical position of the modia, position of the pulley with relation to the modia, fitting of the bigger belt, and the relation the clockwise and the anti-clockwise twist to the yarn and the direction of the big wheel. The fitting of the 'bitak'—how to hold the knob, the main wheel and the sliver. Proper posture, how to keep the disc of the Spindle in position by winding yarn behind and before it. Methods of finding whether the twist is correct, correct method of winding yarn on the spindle, changing the spindle, winding the yarn on the charkha winder.

The different parts of the charkha, their measurements, forms and uses—the bitak, the handle main wheel, the knob, the circumference and the groove of this wheel (V shaped and U shaped), the small wheel—its axis (Khodi) and its repair. Modia and its parts the spring, the plank, the hinge ring at the top. Bigger and smaller belts and their preparation, preparation of oil for charkha, wood and other materials used. The provincial charkha—its construction. Comparative study with the Yervada charkha and its importance in the educational programme.

#### *Standard of attainment:*

*Speed:* 160 rounds in half an hour by the provincial charkha or the Yerwada charkha.

*Quality:* The trainees should be able to spin any count of yarn with a margin of 4 counts (2 above and 2 below) the yarn being of the required standard. Spinning can be by either hand, but both hands should be given practice.

#### *Correlation:*

*Mathematics:* Calculation of the yarn spun. Time and work—wages, measurements of the parts, ratio and proportion, calculation of count, revolution of the wheels and the pulleys.

*General Science:* Mechanism of the charkha, friction and slippage, pulleys and springs, specific gravity, preparation of mixtures in connection with the charkha, oil and preparation of rosin, difference in the movements of the charkha and the dhanush takli.

*Social Studies:* Economics of khaddar, the social philosophy underlying this, the programme of cloth self-sufficiency. The annual average cloth requirements of a child, an adult, a family and a village. Necessary preparations for achieving cloth self-sufficiency personally and assisting in making one's family and village self-sufficient. The political, social, and economic aspects of khadi. The place of the wheel in the growth of human civilisation, i.e., the potter's wheel, the cart-wheel etc. The history of spinning in the evolution of

human civilisation. The history of Indian cotton, textile industry from the earliest times to the present day, its development in other countries in brief, scope for its future development, the role played by the textile industry in the economic, social, cultural and political life of India and other countries. The Charkha Sangh, how khadi work was carried on before its establishment, objectives, constitution and work turned out by it from its inception, the re-orientation of the charkha Sangh during the last two years.

*Drawing:* Drawing the many types of the charkha and their parts.

10. *Fitting and repairing of the equipment for spinning and carding.*

11. *Doubling.*

Doubling. The need for doubling, methods for transferring the hank yarn of the charkha or takli onto the charkha spindle, the position of the small belt while doing doubling, fitting the spindles on the doubling frame, how to hold the latter while in action, construction of the doubling stand, different types of the equipment for doubling.

*Amount of work:*

10 hanks of yarn.

*Correlation:*

*Mathematics:* Calculation of the yarn, single and double.

12. *Weaving:*

During the two years' course, the trainees will only be introduced to weaving. Weaving as a basic craft will be taken up in the third year of the course. During the first two years' course the trainees will be introduced to the following processes:—

Piecing, knotting, bobbin-winding, warping, beaming, spreading and distributing, sizing, drafting, weaving with double threads, in the flyshuttle or by hand. An elementary working knowledge of the different apparatus used in the

above processes. By the end of the course, the trainees should know how to calculate the particular count of yarn necessary for a particular kind of punjam. The trainees should weave at least eight yards of cloth from doubled yarn during the two years' course.

### ALTERNATIVE COURSE

In centres where cotton cannot be grown or seed-cotton is not available to the required extent, the training will begin with carding. The trainees, however, should receive acquaintance with, if not full training in, the preliminary processes, such as cleaning of cotton, ginning, and combing. Arrangements will therefore have to be made for storing of some seed-cotton in every training centre.

### SPECIAL COURSES

During the second year, the students can take up one or more of the following activities as a *special subject*:—

#### 1. Carding with medium bow (*madhyam dhunki*):

##### *Standard of attainment:*

*Speed:*  $3\frac{1}{2}$  tolas in half an hour.

*Quality:* To enable the spinner to spin yarn of count 12 to 16 either on the takli or on the charkha, the speed being 60 and 140 rounds respectively in half an hour.

#### 2. Fine spinning:

Counts 40 and 60 (including ginning, preparation of cotton prior to carding and carding by the Andhra method).

Processes—combing seed-cotton with fish-jawbone or with comb.

Ginning with rod and plank.

Preparing cotton for carding by the Andhra method.

Carding on light bow.

Spinning 40 and 60 counts on the Yervada or local charkha.

#### 3. Spinning on the dhanush charkha:

The method of striking the bow on the spindle, necessary position, holding the sliver and winding the yarn on the

spindle. Requisites for gaining good attainment—good rotation of the spindle, smooth surface on the outer side of the bow-spring leather, the proper fitting of the spindle on the frame, oiling.

Winding the thread on the winder, the measurements of the winder, mechanism of the dhanush charkha and its parts, the uses and measurements of its parts, their fittings and repair. The materials from which the parts are made. How to prepare rosin, the correct proportion of rosin to oil, application of rosin to the leather. A comparative study of the dhanush charkha with the other charkhas and the takli.

*Standard of attainment:*

100 rounds in half an hour, including winding.

4. *Magan charkha:*

Its construction and working, its history and a comparative study of this with the kisan charkha and the provincial charkha and the dhanush charkha.

*Spindle:* Its parts, their shape and measurements; uses of the U and V grooved pulleys, their advantages and disadvantages, the materials from which the parts are made, turning the spindle, the hooked spindle and its use, the ratio between the circumferences of the wheels and between these and that of the takuva (spindle), finding the count and strength of the yarn and the twist per inch.

*Standard of attainment:*

*Speed:* 240 rounds in half an hour.

## B. CLASS ORGANISATION AND MANAGEMENT

1. *Class management:*

Construction of the class-room, floor space per student, arrangements for light and ventilation, arrangement of the class for the different activities, position of the teacher, arrangements for keeping the equipment.

*Correlation:*

*Mathematics:* Calculation in connection with the floor space and construction of the room.

*General Science:* Lighting and ventilation.

2. *Store management:*

Each trainee should be given practical training in running the craft store by turns. Proper storage of raw materials, equipment and finished products, area of the floor-space and wall-space for a training school of strength 60 and for a practising school with specified strength, construction of the store, arrangement for keeping the different articles, orderliness in arrangement, protection from rats and other harmful agencies, cleanliness of the store records pertaining to the stores, sorting, numbering and labelling of yarn, classifying, labelling and numbering of equipment, maintaining accounts of raw materials, equipment and finished products, maintaining the stock-book, ledger and daily cash-book.

3. *Preparation, repair and sale of craft equipment:*

As far as possible all the necessary equipment should be prepared and repaired in the carpentry and metal work sections of the training school. Besides, efforts should be made to prepare, repair and supply the necessary equipment for the local basic schools also.

An elementary knowledge of carpentry and smithy necessary for the above.

4. *Maintenance of records:*

The maintenance of daily, monthly, quarterly and annual records of craft-work for each trainee and for each child of the basic school standardwise. Consolidation of these records, monthly, every term and yearly. Maintenance of craft-diary showing time, work and correlated knowledge etc., with necessary illustrations. Graphical representation of the work of children of the basic school and the work of the trainees.

*Correlation:*

*Mathematics:* Time and work, percentages, averages, graph-work.

*Language:* Writing of the craft diary, knowledge of technical terms relating to spinning and weaving, both in Hindustani and the mother tongue.

5. *Cleanliness:*

Cleaning the class-room before and after each process, the carding room, the disposal of waste in the different processes, cleanliness of the store room, cleanliness and care of the material and equipment.

6. *Organisation of exhibitions:*

Value of the exhibits, types of exhibits—models, articles produced, charts, graphs, and posters, proper storing of the exhibits.

7. *Organisation of museum:*

Its necessity, arrangement of articles activity-wise. Chronological order. On a provincial basis. Proper labelling and description. Preservation of the articles, steps to be taken to see that the museum is up to date, organisation of the museum for special educational programmes.

## 5. SYLLABUS IN CARDBOARD, WOOD AND METAL WORK

**Objectives:** To meet the requirements of the self-sufficient co-operative school community in the matter of furniture, tools, implements and the other craft appliances with a scientific understanding of the processes involved so as to bring out the full possibilities of correlated instruction.

### A. CARDBOARD WORK

In a Basic Training School, under the present conditions, when the trainees are recruited from the products of the old type schools where they have had very little training in the use of their fingers, the main activities during the first six months of the admission of a batch of pupils will be those relating to the production of a balanced diet for the school community and the spinning of yarn for their own requirements of cloth. They will require to provide themselves with note books and exercise books and books for the maintenance of craft records. They will, therefore, begin with practice in cardboard work to meet these requirements of theirs. This will also afford the necessary preliminary training for the taking of wood and metal work as a basic craft for those that may have special aptitude for such work. This choice they may exercise after six months of their admission to a training school.

The time to be devoted to cardboard work during the first six months will be, on an average, 2 hours per week. It will be advisable to have a few consecutive days given to it every month, so that the work or models taken up may be completed expeditiously.

1. *Practical:* The exercises recommended are:—

1. Mounting paper.
2. Book-binding.
3. One or two useful models, such as boxes for taklis, winders, shoes, spectacles, razors, small tools etc.

## SYLLABUS IN CARDBOARD, WOOD AND METAL WORK

These will involve modification of materials, such as cardboard, paper and cloth by means of one or more tools or light instruments in a prescribed way and for a practical end.

### 2. Theoretical:

- (i) Tools and their uses.
- (ii) Simple measurements involving the use of:
  - (a) Inch, foot and the metric system.
  - (b) Weights—seers, chataks and tolas, ounces etc.

Use of the following instruments: Ruler, set-square, compasses etc.

(iii) Fundamental principles and techniques in cardboard and paper modelling such as:

- (a) Punching.
- (b) Cutting paper.
- (c) Cutting cardboard.
- (d) Smoothing sharp edges.
- (e) Pasting.
- (f) Dealing with the expansion of mounting materials.
- (g) Pressing.

Note. The above technique will be acquired along with the practical work.

- (iv) Knowledge of colours and their combinations.
- (v) Selection of equipment and material.
- (vi) Evaluation of models (according to the market rate).
- (vii) Record keeping and book-keeping.
- (viii) Use of the graph paper.
- (ix) Practice of scale or measured drawing.

### B. WOOD WORK

(AS A BASIC CRAFT)

Time—Four hours a day.

Note. This may be reduced on an average to 3 hours a day in the month of active cultivation or harvesting, when the trainees will also be expected to lend a hand to the production of articles of food for a balanced diet. Half an hour a

day will be devoted to spinning or self-sufficiency in the matter of cloth.

Mostly such articles or models should be prepared as required for school and community use.

Models suggested:—

- (i) Puni-salai (stick for sliver making).
- (ii) Sliver board.
- (iii) Sliver pressing board.
- (iv) Takli winder.
- (v) Bihar charkha winder.
- (vi) Charkha and charkha stand.
- (vii) Plain pegs.
- (viii) Folding pegs.
- (ix) Guthala.
- (x) Local charkha.
- (xi) Yervada charkha.
- (xii) Kisan charkha.
- (xiii) Carding bow.
- (xiv) Chakala Belna.
- (xv) Plane stock (small or big).
- (xvi) Handle of saw.
- (xvii) Making gauge.
- (xviii) Mallet.
- (xix) Black board with stand.
- (xx) Ink-pot stand (simple or with design).
- (xxi) Stool.
- (xxii) Rack.
- (xxiii) Book-shelf.
- (xxiv) Geometrical instruments.
- (xxv) Small table.
- (xxvi) Repair work.
- (xxvii) Ruler.

## SYLLABUS IN CARDBOARD, WOOD AND METAL WORK

### *Correlated knowledge: Practical:*

- (i) Tools and their uses.
- (ii) A sound knowledge of fitting and sharpening tools etc.
- (iii) Skill in the art of sawing, planning, method of sizing, boring, grooving, simple joining etc.
- (iv) Drawing and graphic representation of the exercises:
  - (a) How to draw lines.
  - (b) The use of the set-square.
  - (c) Erecting perpendiculars.
  - (d) How to obtain various angles.
  - (e) Method of setting the compass.
  - (f) Use of the compass and drawing board.
  - (g) Use of rubber.
  - (h) Use of T-square.

### *Theoretical:*

- (v) Orthographical projection:
  - (a) The diehedral angles.
  - (b) Analysis of models.
  - (c) Knowledge of the following:—Point, line, angle, square, circle, centre, radius, circumference.
- (vi) Growth of trees:
  - (a) Notes dealing with seasoning, shrinkage.
  - (b) Parts of growing trees.
  - (c) Seeds, germination.
  - (d) Roots and their functions.
  - (e) Roots in soluble form.
  - (f) Ascending sap.
  - (g) Evaporation from leaves.
  - (h) Carbon extracted from air.
  - (i) Life-period of trees.
  - (j) Time for felling.
- (vii) Practical demonstration: Transverse section for a tree:
  - (a) Annual rings.
  - (b) Cause of visibility of rings.
  - (c) Composition of rings.

- (d) Heart wood.
- (e) Sap wood.
- (f) Bark and its use.
- (g) Growth of barks and pith.
- (viii) Mechanics of wood work:
  - (a) Matter.
  - (b) Measurement.
  - (c) Metric system: (i) Fractions, (ii) Rule of three.
  - (d) Weight: (Indian system as well as international and English.)
  - (e) Density.
  - (f) Specific gravity.
  - (g) Force and work.
  - (h) Graphic representation.
  - (i) Parallelogram of forces.
  - (j) Resolution of forces.
  - (k) Mechanical devices.
  - (l) Levers.
  - (m) Preparation of polish and paint and polishing, painting and tarring.
  - (n) Preparation of glues and their use.
  - (o) Preparation of different kinds of 'protein' and their use.
- (ix) Geography of wood: Kinds of indigenous wood:
  - (a) Soft wood, hard wood.
  - (b) Reeds and bamboos.
  - (c) Wood growing provinces of India.
  - (d) National income from wood.
  - (e) Export and import.
- (x) Structure of wood.
  - (a) Carbon (C)
  - (b) Oxygen (O)
  - (c) Nitrogen (N)
  - (d) Hydrogen (H)
  - (e) Sulphur (S)
  - (f) Protoplasm.
  - (g) Charcoal.

## SYLLABUS IN CARDBOARD, WOOD AND METAL WORK

- (xi) Kinds of wood and their utility.
- (xii) The parts of tools and how they are made.
- (xiii) Seasoning timber.
- (xiv) Trees containing sap.
- (xv) Protection of wood from white ants etc.
- (xvi) Proper arrangement and storing of wood and models made etc.
- (xvii) Condition of wood after cutting.
- (xviii) Necessity for seasoning.
- (xix) Different methods of seasoning:
  - (a) Natural seasoning.
  - (b) Artificial seasoning: hot water, running stream.
  - (c) Smoke drying.
- (xx) Evaluation of articles etc.
- (xxi) Approximation.
- (xxii) The usefulness of wood in general.

### C. METAL WORK

(AS A SUBSIDIARY CRAFT)

*Note.* Those who have taken wood work as the basic craft must have some knowledge of metal work as a subsidiary craft.

The following models are suggested for this purpose:

- (i) Axle of vertical charkha.
- (ii) "Shami" of charkha and khurpi etc.
- (iii) Nail cutter.
- (iv) Spindle of local charkha.
- (v) Carboard knife and office knife.
- (vi) Nails.
- (vii) Sickle.
- (viii) Khurpi.
- (ix) Drill bits.
- (x) Repair work.

D. METAL WORK  
(AS A BASIC CRAFT)

The following models are suggested:

1. Axle of vertical charkha.
2. "Shamis" of different kinds. "Shamis" are rings in the wooden handles of iron implements to hold fast the implements to the handles.
3. Spindle of the Bihar charkha.
4. Cardboard knife.
5. Office knife.
6. Needle, big for cardboard, class and scriber.
7. Khurpi.
8. Nail cutter.
9. Nails.
10. Sickle.
11. Sarsi or pincers.
12. 'Katta' for bamboo work.
13. Screw driver.
14. Compasses.
15. Chisel.
16. Bits of country drill.
17. Mortice chisel.
18. Scissors.
19. Chholni, kalchhool and chanauta.
20. Pruning scissors.
21. Buckets.
22. Fasul.
23. Phar.
24. Hook and chakmundri.
25. Chains.
26. Razor: Imitation of E.R.N.
27. Different kinds of knife.
28. Imitation of knife 55.
29. Carpenter's and blacksmith's tools.
30. Door locks.

## SYLLABUS IN CARDBOARD, WOOD AND METAL WORK

31. Repair work of the tools, implements and furniture etc.

### *Correlated knowledge: Practical:*

1. Tools and their proper use.
2. Proper method of keeping tools.
3. Proper arrangement of stores.
4. A detailed idea of the up to date tools and implements.
5. Proper test and classification of the metal used.
6. Iron—smelting, the ore nature of cast iron, pig iron, wrought iron (experiment and test).
7. Conversion of cast iron into wrought iron etc.
8. Steel and its recognition.
9. Different types of steel and their uses.
10. Properties of steel.
11. Hardening and tempering.
12. Oxidising.
13. Filing.
14. Blackening process.
15. Cleaning and polishing.
16. Brass alloy, zinc 1 part, copper 2 parts by weight.  
What is an alloy? Properties of brass and bronze.
17. Copper, the ore, processes of extraction.
18. Zinc, the ore, processes of extraction.
19. Graphic representation of one's own work.
20. Record keeping.
21. Evaluation.
22. Co-efficient of expansion of different metals.
23. Action of acid on metals.
24. Metal as a conductor of electricity and heat.
25. Detailed knowledge of iron, copper and tin.
26. Some idea of machines and their usefulness.
27. How far may we utilise machines without detriment to the rehabilitation of the village economy.
28. Knowledge of the working and mechanism of the modern inventions with an appreciation of the past

back-ground in each case particularly in regard to the following:

- (a) Electricity.
- (b) Radio.
- (c) Wireless.
- (d) Water pipes and pumping etc.
- (e) Steam engine.
- (f) Power plants, elementary knowledge by demonstration and visit to other workshops.

29. Force and action.
30. Friction and electricity.
31. Electroplating and alloying of metals.
32. Knowledge of the following elements:
  - (i) Potassium.
  - (ii) Sodium.
  - (iii) Nitrogen.
  - (iv) Carbon.
  - (v) Calcium.
  - (vi) Chromium.

#### *Mathematics:*

1. Different systems of linear measurements and their practical use.
2. Measurement of area and angular measurement, irregular geometrical figures.
3. Acquaintance with and recognition of different geometrical shapes viz., triangles, circles, quadrangles, polygon and irregular figures, sectors, arcs, chords, segments, tangents, and height of an arc with special reference to house building.
4. Fractions and decimals.
5. Resultant force of two or more forces.
6. Practice.
7. Time, work and wages.

#### *Geography:*

1. Distribution of iron, copper, tin and zinc in (a) Bihar (b) India and (c) the world.

## SYLLABUS IN CARDBOARD, WOOD AND METAL WORK

2. Uses of iron, copper, tin and zinc.
3. Reserve resources of metallic ores in Bihar, India and the world. Quantity extracted per year.
4. Quantity and value of metallic ores exported to different countries of the world.
5. Distribution of the metallurgical industries in Bihar, India and the world along with the factors controlling their distribution.
6. Growth of Jamshedpore (Bihar) and Burnpore (Bengal) with causes.
7. A brief knowledge of the metallurgical industries of the United Kingdom, U. S. A., Germany and Russia.

## 6. SYLLABUS IN KITCHEN WORK

### Objectives:

1. Necessary skill in and the scientific understanding of the different processes, from the purchasing and storing of food materials to the serving of food.
2. Understanding of the intellectual, moral and social aspects of work in the community kitchen—reorganisation of the community kitchen of the training centre as a laboratory of Basic Education.
3. Ability to educate children through the above knowledge and skill.

*Note.* The syllabus has been arranged logically from the purchasing and storing of grain to the serving of food. The actual training, both practical and theoretical, will have to be organised according to the needs of the community. It is expected that full practical training and scientific knowledge with regard to the different processes will be completed during the two years' course.

A few suggestions regarding correlation have been made with regard to each process. These are, however, not completed and have to be developed by experiments in the different training schools.

### Activities:

1. *Purchasing, collection and storing of necessary food materials:*

Purchasing and collection of grains, cereals and pulses—when, how and why.

Necessity of purchasing and collecting at certain seasons.

The methods of testing grains, vegetables, eggs, fish and meat, milk and milk products, oil and ghee before purchasing.

## SYLLABUS IN KITCHEN WORK

Collection of necessary food materials:—

- (a) Grains, cereals and pulses—when, how and why?
- (b) Vegetables—When, how and why?
- (c) Fruits—When, how and why?
- (d) Milk and milk-products.
- (e) Oil and fats.
- (f) Processed food-stuffs—sugar, gur, etc.
- (g) Preserved food-stuffs—pickles, jellies.
- (h) Spices.
- (i) Fuel.
- (j) Salt.

2. *Storing and preservation of food-materials:*

- (1) To prevent deterioration from climatic and atmospheric influences.
- (2) To save from vermin, fungi and other destructive biological agents.
- (3) To maintain the quality.

(a) *Grains, cereals and pulses:*

- Indigenous methods.
- Scientific methods—comparative study with regard to their suitability for Indian conditions.

Effect of heat, light, air, darkness, vermin, fungi, rats, insects and other harmful destructive agencies on stored food grain.

Methods of prevention.

Study of national wastage in necessary food grains through improper storing.

Study of proper storing of food grains as a national problem of vital urgency.

Study of the methods of storing in different countries with the same climatic and economic conditions.

(b) *Vegetables and fruits:*

Indigenous methods of drying, salting, pickling, preserving and storing.

Scientific methods of preservation, dehydration, refrigeration, canning.

Preparation of jams, jellies and chutneys.

Comparative study, with experiments with regard to their application to rural areas.

(c) *Milk and milk products:*

Indigenous methods of preserving and preparing cheese, khoa and ghee.

Scientific methods. Condensed milk, powdered milk, tinned butter and cheese.

Comparative study.

Milk turning sour, study of the scientific reasons and methods of prevention.

Storing of salt.

Storing of jaggery and sugar.

Fuel—special problem of storing wood in village homes.

Preservation of fish and meat.

Merits and demerits of preserved food.

3. *Preliminary preparations for cooking:*

(i) *Grinding, husking and pounding:*

Proper use and care of the different types of equipment used for the pounding of rice and grinding of wheat, millets and pulses.

Selection of the most suitable equipment with regard to both the volume of work and the preservation of the nutritive elements in food.

Correct methods of grinding, husking and pounding with regard to the volume of work and the preservation of the nutritive elements in food.

Proper disposal of wastage.

Cleanliness of the pounding and grinding place and equipment, both before and after work.

Mechanics of the different apparatus used for grinding and pounding—comparative nutritive value of the hand-pounded versus milled rice and hand-ground flour versus milled flour.

## SYLLABUS IN KITCHEN WORK

### (ii) *Cleaning of grains and other food material:*

Methods of cleaning—winnowing and separating, sieving, hand-cleaning, cleaning by washing. Correct methods and the use of proper instruments.

Cleaning of salt.

Proper disposal of wastage.

Cleanliness of place and equipment both before and after work.

Cleaning of grain as an educational process as compared with cleaning through hired labour.

### (iii) *Cutting of vegetables:*

Proper methods of cutting, with reference to obtaining the greatest food-value of the vegetables—necessary implements (their appearance).

Washing of vegetables in water treated with potassium permanganate or any other substitute before cutting for use as salads in a raw condition.

Hard and soft skinned vegetables.

Necessity of tasting of some vegetables before cutting.

Action of air on vegetables cut.

Metallic effect on vegetables.

Proper disposal of waste of vegetables.

Cutting of meat and fish.

Cleaning of cutting implements and the place both before and after cutting.

### (iv) *Storing of water:*

Sources—wells, tube-wells, ponds, tanks and rivers.

Impurities found in water—suspended and dissolved—organic and inorganic.

Methods of purification—filtration—kinds of filters—boiling, addition of chemicals—proper methods of disinfecting and storing.

Proper receptacles—comparative value of mud vessels and metallic vessels.

### (v) *Lighting the fire:*

Twigs for lighting fire (kerosene to be discouraged).

Correct methods of lighting the fire—use of waste materials—wood shavings, waste cotton, dry grass.

Varieties of fuel—solid wood, kinds of wood (cheapest, economical and available). Use of cowdung cakes to be discouraged: Why? Charcoal and coal.

Liquid—kerosene, spirit etc.

Gaseous—carbon monoxide etc.

Electricity.

Comparative merits of the different kinds of fuel with regard to their heating capacity and their effect on articles cooked.

Coal—how obtained.

Difference between coal and charcoal.

History of fire and the development in the heating appliances.

The match box—match-making industry—chemicals required—centres of match-making industry.

Fire-place—size—kinds of ovens prevalent in India.  
The ideal oven.

Location of the fire place with regard to the direction of the wind.

(vi) *The problem of smoke:*

Its composition.

Burning without smoke—necessity for air—necessity for the proper arrangement of dry fuel the problem of dry fuel during the rainy season.

Blowing instrument—types.

Need for a chimney—convection currents—principle of ventilation.

Conduction and radiation.

Dissipation of energy—use of fuel energy to a maximum in the ideal hearth.

Uses of ash.

#### 4. *Cooking:*

(i) *Planning:*—Family and community meals—for a day, a week and a month, and a term—with regard to

the necessary time, man-power, material, equipment and cost.—Special planning for feasts and festivals.

(ii) Distribution of work.

(iii) Selection of proper material and equipment.

*Material:*—Testing of food-stuffs.

*Equipment:*—Earthen vessels, metallic vessels—iron, brass, bell-metal and copper vessels. Comparative study of the different materials used for cooking. Vessels with regard to national health and national economy. The action of metals on cooking.

(iv) Cleanliness and arrangement before cooking.

(v) Different methods of cooking—boiling, steaming, stewing, roasting, baking, braising and frying—scientific principles underlying the different process.—Comparative study of the different methods with regard to time, nutritive value and expenditure—methods best suited for community kitchens.

(vi) Cooking of common Indian dishes with minimum expenditure of fuel and energy, preserving the maximum food value and with proper attention to taste and attractive appearance.

Preparation of rice—proper method of washing rice for the best preservation of its nutritive value—correct method of cooking rice—wastage of food in throwing away rice-water or gruel.

Comparative merits of raw and par-boiled rice.

Pulses—different methods of cooking pulses in different parts of India. The importance of pulses in the vegetarian diet as the main source of protein.

Preparation of bread from wheat and other millets.

Preparation of vegetables, both raw and cooked.

Necessity for covering the vegetables during cooking. The use of soda to be discouraged. Importance of vegetables for healthy living. Preparation of raw salads and chutneys. Importance of raw-food in health. Use of spices in cooking—their merits and demerits.

(vii) Preparation of sick-diets. (For details see syllabus on health education).

Covering and proper storing of cooked food with the object of preserving the maximum food-value. Cleanliness and arrangement of the kitchen and cooking utensils and necessary materials after cooking.

(viii) Preparation of milk and milk-products.—Testing of milk, use of the lactometer, boiling of milk, skimming of milk, use of skimmed milk. How to make curds—action of bacteria on milk—preparation of butter and ghee. Use of the local churner and the cream-separator—preparation of butter-milk as an important item in Indian diet. Preparation of khowa and cheese.

### 5. Finishing Processes:

*Food and health:*—Cooking as a helping process in digestion—the function of food—the different complements of food and their functions. What is a balanced diet—how to plan, cook and serve balanced diet. Analysis of the daily meal from the point of view of a balanced diet. Energy requirements of individuals in different seasons, for different ages and different occupations—calculating the caloric value of different items in the daily diet. The staple diet of the villagers in the different provinces of India—its main deficiencies and how to improve them.

The digestive process. (For details see the syllabus on health education).

*Social studies:*—History of the art of cooking—the diets in the different provinces of India and the different nations of the world. Deciding factors—geographical conditions, occupations, economic status, social customs and practices.

*The social and moral aspects of the community kitchen:*—The place of community kitchen in a Basic Training Centre.

The food problem in India and the world to-day. International and national efforts towards raising the dietetic standard of the masses.

Work of the Food Research Institutes in India and the world.

### 6. Serving:

*Preliminary preparations for serving:*

1. Cleanliness of servers and the utensils to be used.
2. Estimating the amount to be served per head with special attention to individual requirement.
3. Distribution of work.

*Actual process of serving:*

The necessity of order, art and discretion in community serving. Serving as an educational process as compared to professional service in the hotels.

*Finishing processes:*

- i. Arrangement and cleanliness of the dining place both before and after eating.
- ii. Disposal of food left over.
- iii. Storing of food that can be used at a subsequent meal.
- iv. Utilisation of food that cannot be used again, into manure or food for animals.
- v. Washing of serving and eating utensils.
- vi. Proper methods with a view to economy of time and energy.
- vii. Cleansing agents used—comparative study.

### 7. Organisations:

1. *Arrangement of the community kitchen:*—The dimensions of the kitchen. The situation of the well with relation to the situation of the kitchen. Arrangements for fuel, water, vessels, stores, cutting vegetables, preserving milk and its products and dining. Situation of the grinding and pounding place—the chakki (grinder) and the courtyard.

2. *Grinding and pounding:*—Number of grinding and pounding stones required—kinds of stones—types of grinding stones—ordinary, adjustable and ball-bearing. Mechanism of the same.

3. *Oil-pressing*:—Position of the ghani in the training school. Community study of the different kinds of ghanis and their parts in different parts in India. Best and cheapest type—organisation of oil pressing as an educational programme.

4. *The store-rom*:—The ideal store-room. Neat arrangement of the store-room. Necessity for almirahs, earthenware vessels and tins with proper lids for proper storing of necessary food-materials. Model weights and measurement. Labelling and classification of food materials.

Special arrangements for the storing of fruits and vegetables.

Arrangements for the storing of milk and milk products.

5. *Kitchen-utensils*:—Types of vessels for rice, bread, pulses, vegetables and milk and for serving. Vessels of different metals and alloys—their reaction towards milk, alkalis and acids. Preparation of a list of utensils by the students. Reactions of different metals towards light, air, water and fire. Need for tinning vessels. Earthenware vessels. Plank and rollers for roti-making.

6. *Distribution of work*:—Proper distribution of work to the members of the community in the several departments of kitchen work.

7. *Accounts and records to be maintained*:—The stock-book, receipts, issues, issue-register, cash-book, receipts and expenditure. Register for milk.

Register for attendants. Register for vegetables. Register for guests and extras.

Charts of daily, weekly and monthly diet, giving:

- i. The different food-values.
- ii. The caloric value.

Daily records of kitchen work giving complete accounts of the work done, number of workers, time taken, material and equipments used and correlated knowledge.

## 7. SYLLABUS IN ART

1. Drawing and Painting.
2. Decoration and Ornamental Art.
3. Artistic Handicrafts.
4. Festivals and Celebrations.
5. Art teaching in schools and syllabus for children.
6. Art History.
7. Formation of Taste.

**1. Drawing and Painting:**

- Knowledge of colours—Primary colours.
- Warm and cold tones.
- Colour combinations—good and bad combinations—colour harmony—harmony of opposite colours—analogous harmony.
- Colour mixing—earth and stone colour.
- Chemical colour—necessity of binding medium in colours.
- Form-difference in forms-similarity-comparison-preparation-spiral in nature-finding out forms from nature and utilising them in painting and in making things of daily use—form in classical art.

**Painting:**—Original painting—copying from old masters-posters-decorative handwriting-composition-proportion, perspective-nature study-studying objects coming in original pictures-model drawing of things used in daily life, including craft equipments-cubical forms and circular forms in home-memory drawing. Tompera and wash technique.

**2. Decoration:**

- Grammar of ornamental drawing, ornamental forms and designing with them.
- Alpona and Rangoli—collecting designs from old art.
- Home Decoration:**—Festival decoration-stage decoration-decorating with flowers, leaves, alponas etc.—making flower garlands and ornaments-making a central place for festivals designing for textile work, needle work etc.—organising and decorating exhibitions.

3. *Artistic Handicrafts:*

Papier-mâché, designing earthen pots-clay work-research work in local crafts and revival of dying handicrafts.

4. *Festivals and Celebrations:*

Seasonal, national, social and religious festivals. Their place in Nai Talim. Old way of celebrating them, how these festivals can be celebrated in our schools—planning and organising festivals.

5. *Art teaching in schools and syllabus for children:*

Place of art in Nai Talim.

Child art. Child's art experiences. Different stages of child's development in art.

Syllabus making—how to prepare programmes of art studies for different grades.

6. *Art History:*

Introduction to the history of Indian art beginning from paleolithic times to the recent times with the help of actual works. Photographs or paints—short introduction to works of other countries, if possible. Shadanga—the six limbs of Indian Painting. Art history with reference to the Chinese and Western aesthetics.

7. *Taste:*

National taste, to form it.

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## 8. SYLLABUS IN MUSIC

### Theoretical:

1. Music and its place in Nai Talim.
2. The ideal music teacher and his equipments.
3. Aims and methods of music teaching.
4. Methods of developing svar gnan (knowledge) and tala gnan.
5. Aids to the teaching of music.
6. Team-singing and group singing.
7. Group activities:—
  - a. School concerts.
  - b. Music festivals.
  - c. Excursions to places of musical importance.
  - d. Staging of operas.
  - e. Music exhibition.
  - f. Development of school choir and orchestra.
8. Lessons in music appreciation.
9. Outlines of the history of Indian music.
- 10. Folk-music and folk-dances and their place in education.

### Practical:

1. Fundamental technical terms.  
Swara-nomenclature. The important melas (melakartas) and thalas. Acquaintance with common ragas. Their avarohana and arohana.  
Ragas and talas common to both Karnataki and Hindustani music.
2. Acquaintance with important musical forms and their characteristic both in Karnataki and Hindustani music.
3. Important concert instruments of the stringed, wind and percussion groups.
4. Outlines of notations.
5. About 40 songs of an all-Indian character to be covered. (The idea being that in a school year about 30 songs can be taught—10 from the all-India list and 20 songs locally known and current.)

## 9. SYLLABUS IN PHYSICAL EDUCATION

Physical education, in the true sense of the term, should not be treated as a separate subject in Basic Education. The balanced and harmonious development of the body, not as an independent end in itself, but as an integral part of the educational process, the harmonious development of the individual as a whole, forms the basis of the programme of basic education. All the activities in a basic school or a basic training school, therefore, form parts of the programme of physical education. The special function of physical education should be:—

### *Practical.*

1. A. The development of these different activities on a scientific basis to ensure the necessary physical development, e.g.—

#### (a) *Agriculture:*

Preliminary processes—standing in a line and taking the implements, marching with implements to the plot. Actual processes like digging, mulching, bedding, manuring, levelling, sowing, collecting, transplanting, watering, weeding, reaping, harvesting, picking, weighing and storing etc.

#### (b) *Spinning:*

Cleaning the cotton, ginning, carding, making of slivers, spinning—different postures, different processes of spinning, different processes of weaving, piecing, knotting, bobbin winding, wrapping, beaming, spreading and distributing, seizing and drafting.

#### (c) *Cooking:*

Drawing water from wells and filling up of vessels, cutting vegetables, chopping wood, husking, pounding, grinding, cooking, cleaning up of vessels, serving.

## SYLLABUS IN PHYSICAL EDUCATION

(d) *Cleanliness:*

*Personal:* Washing of clothes and personal hygiene.

*Community:* Cleaning of latrines, trench-digging, filling up the earth in tins etc. Cleaning of urinals, lifting, carrying, washing etc.

*Village cleanliness:* Digging of drains etc.

(e) *Picnics, educational excursions and hiking.*

B. Development of special activities which would serve as corrective exercises.

2. *Organisation of:*

(a) *Games:*—Specially indigenous games, which need little or no equipment to supplement the normal activities of the basic school.

(b) *Exercises:—*

(i) Indigenous etc.

(ii) Best forms of exercises from other countries.

3. Attainment of necessary skills like climbing, swimming, cycling, skipping etc.

4. Rhythmic activities like folk dances etc.

5. Discovery, organisation and re-orientation of folk-games, folk-dances and festivals.

*Theoretical.*

1. Understanding of the close-correlation of physical development with intellectual and moral development in true education. The dangers of over-emphasis on physical education as an end in itself.

2. The psychological and sociological aspects of physical education. Physical education with special reference to the needs of the children in rural areas.

3. Study of the human body. (This part of study will be common to Health education also. For details see syllabus on health education).

4. The place of physical education and the standard of physical development in the different nations and different times.

5. A historical study of physical education in India upto the modern times.

The necessary skills, habits, attitudes and knowledge outlined under the headings of Social Training, Cleanliness, Health and Hygiene, Gardening and Agriculture, Kitchen work, Spinning and Weaving, Cardboard, Wood and Metal work, Art, Music and Physical Education have been first designed to help the teacher towards a balanced and harmonious development of his or her own personality, and secondly to give him or her the necessary equipment for the education of children under his care.

His professional training will centre round his work with the children and all theoretical studies regarding Child Psychology, Educational Psychology, Methodology, School Administration and Organisation should develop out of the problems arising from the actual work with the pupils.

#### PROGRAMME OF WORK

The programme of work with the school children should be developed in the following stages:

1. Observation of school programmes including class-work, excursions, school meals, health programmes, free play etc.
2. Participation in school activities with the co-operation of the class teachers.
3. Actual work with the children:
  - (a) Previous discussion between the class teacher and the training school staff.
  - (b) Planning.
  - (c) Actual teaching.
  - (d) Recording of work.

## METHODOLOGY

1. How to help the child towards a balanced and harmonious development of all his faculties through the activities of the school—education through work as an integral educational process—the development of intellect and character through this method—formation of right social habits and attitudes—knowledge of subject-matter.
2. How to organise an educational unit centering round work.
  - (a) Planning—time, place, raw-material, equipment and workers.
  - (b) Preparation—place, raw-material, equipment, cleanliness and arrangement. Mental and physical preparation of the workers—understanding the why and wherefore of work—joy in work.
  - (c) Actual work.
  - (d) Finishing.
  - (e) Recording.
  - (f) Assessment—how far the work has been done according to plan.
  - (g) Correlation with the different subjects.
  - (h) Formation of habits and attitudes.

## SCHOOL ADMINISTRATION AND ORGANISATION

1. How to prepare educational programmes—for a week, for a month, for the whole term.
2. How to conduct a class, average number of students being 20 to 30.
3. How to prepare educational equipment—teaching aids, maps, charts, graphs and illustrations.
4. How to conduct teachers' meetings.

## BASIC NATIONAL EDUCATION

5. Educational records to be maintained by: (1) Students. (2) Staff.
6. How to use (1) reference books (2) dictionaries (3) maps, atlases and charts and (4) technical literature.
7. How to prepare lessons, lesson-notes, lesson-records etc.
8. How to prepare time-tables.
9. How to plan and carry out cultural programmes such as festivals, meetings, study circles, debating societies etc.
10. How to organise school meals as part of the educational programme.
11. How to plan and organise educational excursions.
12. The proper use and selection of the library.
13. The proper use of the newspapers and other journals and selection of books, provision of books for collateral reading, supervised reading in class, guiding and testing the reading of pupils—teachers' library, professional and general.
14. How to organise the school on the lines of a self-governing community—school assembly—school court of Justice—election of ministers—distribution of work—reports of work.
15. Tests and measurements in education—their values and limitations.
16. Supervision in Nai Talim—its technique.
17. The technique of assessment of work—in place of the present examination system.
18. How to formulate standards of attainment.

## ELEMENTS OF EDUCATIONAL PSYCHOLOGY

The study of the educational psychology in Nai Talim should not be logical but psychological, i.e., it should evolve out of the actual problems arising in the community life in the training school and in the handling of the children in the pre-tising school.

The objectives of this training should be:

(i) to help the future teachers to form the habits of psychological approach to all problems arising from individual and community life in the training school and the practising school.

(ii) to develop in them the capacity to handle these problems through the psychological method.

(iii) to help towards an understanding of the true function of psychology as a diagnostic and remedial science and not an abstract mental science.

*Course of Study:*

1. Educational Psychology as a science—its relationship with other Social Sciences.
2. The psychological method.
3. Different states of growth, development and maturation of human beings and different stages of education corresponding to them.
4. Relation of the body and the mind.
5. Importance of the unconscious.
6. The place of instincts in the life of man and higher animals—as the ground work on which the structure of the mind rests.
7. The emotions—signs of emotional disturbances and lack of balance, specially in adolescence—how to achieve emotional equilibrium.
8. Psychology of sex. Manifestations of sex-instinct in childhood and in adolescence—how to develop a normal attitude towards sex in children and adults.
9. The psychological basis of education through work/education through work as a means of integration of Personality.
10. The process of learning—the place of motivation.
11. The component factors in the attainment of skill.
12. The place of imagination in child and adult life.
13. Normal and abnormal behaviour—the dividing line.

BASIC NATIONAL EDUCATION

14. Problem of fear and how to solve it.
15. Problem of jealousy.
16. Problem of rewards and punishment.
17. Psychology of competition.
18. Psychology of play and recreation.
19. Psychology of such traits as lying, stealing, thumb-sucking, nail-biting, bed-wetting, assertiveness, fidgetiveness, shyness and how to solve them.

N.B. The above list is to be taken merely indicative and not exhaustive.

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